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Nos. 265 and 268

In the Supreme Court of the United States

OCTOBER TERM, 1941

FEDERAL POWER COMMISSION AND ILLINOIS COMMERCE COMMISSION, PETITIONERS

v.

NATURAL GAS PIPELINE COMPANY OF AMERICA AND TEXOMA NATURAL GAS COMPANY

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v.

FEDERAL POWER COMMISSION AND ILLINOIS COMMERCE COMMISSION

ON WRITS OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE SEVENTH CIRCUIT

SUPPLEMENT TO THE BRIEF FOR THE FEDERAL POWER COMMISSION AND ILLINOIS COMMERCE COMMISSION CONSISTING OF EXTRACTS FROM THE GOVERNMENT'S BRIEF IN DRISCOLL v. EDISON LIGHT & POWER CO., NO. 509, OCTOBER TERM, 1938

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The following material consists of extracts from the brief filed by the United States, as *amicus*

curiae, in *Driscoll* v. *Edison Light & Power Co.,* No. 509, October Term 1938. The material reprinted appeared in the original brief at pages 29 to 138. The few omissions have been noted by asterisks. For purposes of clarity, page, heading and footnote numbers have been changed.

I. The Fair Value Rule With Its Emphasis on Reproduction Cost Has Proved to be Unsound and Unworkable * * *

A. *The rule is unrelated to the end sought.*

The constitutional requirement governing the determination of public utility rates is that the utility shall be permitted to earn a compensatory return on the property which it has devoted to the public service. What has been thus devoted is the capital invested in the business, and it is on this that the owners of the enterprise are entitled to a fair return. This was pointed out by Mr. Justice Brandeis, concurring, in the *Southwestern Bell Telephone Co.,* case 262 U. S. at 290:

> The so-called rule of *Smyth* v. *Ames* is, in my opinion, legally and economically unsound. The thing devoted by the investor to the public use is not specific property, tangible and intangible, but capital embarked in the enterprise. Upon the capital so invested the Federal Constitution guarantees to the utility the opportunity to earn a fair return.

The rule of *Smyth* v. *Ames* [169 U. S. 466] embodies the fundamental misconception that it is "value"

which has been embarked in the enterprise and on which the investors are entitled to a compensatory return.

There is a further consideration which makes the fair-value rule unsound in principle. In measuring the rate of return, recourse is had to profits and economic conditions generally. The profits of business in general must of necessity, for purposes of comparison, be based upon investment, since that is the basis of accounting and financial reporting. As stated in *Bluefield Water Works, Etc. Co.* v. *Public Service Commission*, 262 U. S. 679, 692:

> A public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on *investments* in other business undertakings which are attended by corresponding risks and uncertainties; but it has no constitutional right to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures. [Italics supplied.]

When rates of return on *investments* increase, it does not follow that the same or even any increase is reflected upon a *fair value* basis. In fact, it is common knowledge that during the period from 1926 to 1929 rates of return on the value of securities actually decreased very substantially, although during the same period higher rates of return for

public utilities were prescribed by this Court (*United Railways* v. *West*, 280 U. S. 234). If when rates of return in industry in general are high as based upon investment, but low as based upon the only evidence of value we have, namely, value of securities, and the computed high rates are applied not to investment but to the estimated reproduction cost of properties, a double defect occurs: (1) the application of the rate of return is faulty; and (2) the basis on which it is applied, reproduction cost, is speculative.

This point, we respectfully submit, is worthy of careful consideration. The rate of return on *investment* during the boom years did increase, but as Appendix B, *infra*, pp. 95–97, shows the rate of return greatly decreased on the basis of the market values of securities. Thus in Appendix B it is shown that if 1926 be taken as 100, the index of earnings of composite industries, as related to stock prices, was 78.7 in 1927, 73.9 in 1928, 66 in 1929, 53 in 1930, etc. Thus, increased rates of return based upon *investment* are not attended with increased rates of return based upon market value of securities or, as far as can be ascertained, on market value of properties. It would be proper and consistent to apply the rate of return on investments in industries in general (with elimination, of course, of speculative profits) to the *investment* in public utilities. But it distorts the comparison and leads to double compensation

when prices are high, to apply the rate arrived at in the manner indicated not to investment but to a base influenced by high prevailing prices. The rate of return measured by investment should be applied to investment, but only a rate of return on "value" should be applied to value; the two rates should not be confused.

It has been stated that the end sought is just compensation for the use of properties devoted to the public service. The rates of return which are being made on *investment* in other business undertakings, which are attended by corresponding risks and uncertainties, when applied to the reproduction cost of public utility property cannot but work a hardship on either the utilities or the consumers. During periods of high price levels, the hardship is on the consumers. Conversely when low prices prevail, the hardship is on the companies because a low rate would be applied, theoretically at least, to a low base. If this principle were strictly adhered to in depression periods, severe and, perhaps, disastrous consequences to the utilities would inevitably ensue. A literal compliance with the reproduction cost principle permits the utility to reap the profits of every type of unearned increment which accrues to monopolistic or semi-monopolistic enterprises.[1] The inclusion of this element

[1] For a condemnation of the inclusion of the item of appreciation as an item in the value of the utility see the discussion in the Report of the Federal Trade Commission to

in a rate valuation penalizes the consumer by transferring to the utility valuation the appreciation in property and equipment which is generally attributable to the efforts of the community at large including the consumers of the utility service. It is submitted that the use of the unearned property increment as an element of value, at least for rate-making, is wholly unjustifiable as a matter of sound economic theory or legal principle.

B. The rule produces unreliable, arbitrary, and absurd results

As a matter of practice the two chief elements most commonly considered in arriving at fair value under the rule are original cost and reproduction cost.[2] This Court has indicated that neither element is entitled to full weight but has failed to specify how much weight should be ac-

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the Senate of the United States on Public Utility Corporations, January 28, 1935. S. Doc. 92, Part 73A, 70th Cong., 1st sess.

[2] See the letter from Mr. W. R. McCann criticizing the appreciation element in reproduction cost estimates submitted to the Special Committee of the American Society of Civil Engineers. *Report of the Special Committee to Formulate Principles and Methods for the Valuation of Railroad Property and Other Public Utilities* in 81 Transactions of the American Society of Civil Engineers, 1311, 1618–1619 (1917).

[3] Booth, *Prudent Investment, Fair Value, and Public Utility Regulations*, 1 Nat. Lawyers Guild Q. 229, 234 (1938). The author is the general counsel of the Illinois Commerce Commission.

corded each element. As stated in *McCardle* v. *Indianapolis Water Company*, 272 U. S. 400, 410:

> * * * this does not mean that the original cost or the present cost or some figure arbitrarily chosen between these two is to be taken as the measure [of fair value]. The weight to be given to such cost figures and other items or classes of evidence is to be determined in the light of the facts of the case in hand.

The utter impossibility of taking two widely divergent amounts arrived at on wholly different bases, the one (original cost) subject to rather exact measurement and the other (reproduction cost) speculative in the extreme, and combining them reasonably so as to produce a legally sufficient result, has led public utility regulatory agencies to make a polite bow to the elements mentioned, but to employ in fact either prudent investment or reproduction cost as the sole criterion of value. It is wholly unreasonable to expect any commission or any court to combine or compare or weigh $10,000,000 representing the investment in electric plant, $15,000,000 representing one engineer's appraisal thereof, and $8,000,000 representing another engineer's appraisal, in such manner as to arrive at present fair value without producing a result arbitrary or at best unreliable.

The main difficulty with the fair value doctrine lies in the reproduction cost element. This element

cannot be regarded as value *per se*. The mere fact that an article would cost a great deal to reproduce today is no evidence at all that it is worth the cost of reproducing it. The cost of reproducing the street railways in the United States would run into enormous sums, but it is common knowledge that such railways are not being built but rather are being abandoned because they are unable to earn their way. The fair value principle, by emphasizing reproduction cost, ignores the economic worth or value of property by substituting therefor an arbitrary criterion. Whether or not the street railway industry is economically sound is of no moment to the valuation engineer. He blindly pursues his policy of valuing what he sees and adds lump sums for the intangibles he cannot see. The engineer values what he finds even though the property would never be reproduced in its present form, even though the market value might be nil, or merely the price of salvage. Despite these uncertainties the estimated cost of reproducing the plant and equipment finds its way into the appraisal which is presumed to represent "value."[4]

[4] "First, the only possible argument in favor of cost of reproduction springs from the analogous use of cost of reproduction in private competitive business. * * * But the cost of reproduction so far as utilized in establishing prices in private business is not the cost of reproducing the identical property but the cost of reproducing an equally serviceable property. Or, let us say, it is the cost of reproducing the article or service, or an equally useful article or

The theory of reproduction cost, to have any value, must be deemed to have some connection with market value. Yet by its very nature such cannot be the case. There is, generally speaking, no market value for public utility properties; the reproduction cost theory attempts to supply that which does not exist. Value in the last analysis means exchange value—the ability to command other commodities or services in exchange—and this necessarily leads to market value, which is not and cannot be synonymous with reproduction cost.[5]

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service, and never the cost of reproducing a particular plant. In truth, invention and improvement work changes in all industrial operations so rapidly that it is difficult to find any plant a few years old which would be reproduced by competent engineers in the same form today. Therefore, to utilize the idea of cost of reproduction intelligently is not to utilize the cost of reproduction of any particular property but of a service or of an equally useful service. It must be apparent that such a basis for rate making would open up a new field for speculative estimating, to the increased profit of engineers and lawyers and to the increased confusion of the courts and commissions and would bring increasing instability to all public utility operations." Richberg, *A Permanent Basis for Rate Regulation* (1922), 31 Yale L. J. 263, 277.

[5] In one of the more recent publications the fallacy of using reproduction cost as a measure of value is stated by the authors as follows: "In exchange-value economics the real value of a plant is not determined by the cost of reproducing the identical plant but by the cost of producing the commodity in a new plant having the most modern equip-

The reproduction cost factor is particularly inappropriate as applied to property of electric and communications utilities. It is common knowledge that great strides have been made during the last decade in the science of producing, transmitting, distributing, and utilizing electric energy. The same may be said of the telephone and telegraph industries. There are still in existence old plants, middle-aged plants, and modern plants of every sort and description. Regulatory bodies are prohibited from applying the substitute-plant principle, *McCardle* v. *Indianapolis Water Co.*, 272 U. S. 400, 417, 418; hence there is no recourse but to value the property used in public service. This means, as far as public utility valuation engineers are concerned, that old structures, old poles, and old equipment must be valued on the basis of what it would cost to reproduce them today even though they are not, in fact, being produced and would

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ment required to produce the article. No one would be willing to invest in an obsolete plant if a new one could be built to be operated at much lower operating expenses per unit of production if such a plant could be built for the same cost as the obsolete one. It is the cost of building a modern plant of similar capacity that determines the value of a plant in an unregulated competitive industry, and not the cost of reproduction of a similar plant. Hence, reproduction cost does not cause the owners of a regulated enterprise to fare the same as the investors in unregulated competitive enterprises." Wilson, Herring, and Eutsler, *Public Utility Regulation*, 126 (1938).

not be reproduced under any imaginable circumstances.[6]

In practice, the indefensible character of reproduction cost figures stands out in bold relief. In arriving at estimated reproduction cost, two essen-

[6] In analyzing the inappropriateness of reproduction cost in its relation to rate regulation, the minority members of the New York Commission on Revision of Public Service Commissions Law stated: "Even if one assumes that the *value of the property*, somehow conceived, is the proper basis of rate control, it by no means follows that cost of reproducing a substantially similar plant even roughly measures that value. This fact must be evident if we take the analogy of any unregulated business property, or of an ordinary commodity used for consumption. The value of a dwelling house, for example, is not measured by the cost of producing a replica unless it may be assumed that, were the existing house destroyed, its owner would find it expedient to build another one just like it. Even more striking is the difference between the value of the assets of a growing, progressive business enterprise and their cost of reproduction. These assets, to be sure, may still be in use, and giving what would be called good service; yet many of them are not giving as good service as could be produced by the most modern type of plant and equipment, constructed in the best possible location, and adapted to existing conditions of demand and of industrial technique. An intelligent appraiser, to be sure, might estimate the replacement cost of these properties as a starting point, but in that case he would write down the reproduction costs ruthlessly, perhaps to a mere fraction of the cost new, as a recognition of the fact that obsolescence, inadequacy, and physical depreciation have greatly impaired their present worth. This, at least, would be the practice of an appraiser who wishes to secure an honest valuation rather than a bloated statement for purposes of 'dressing' the balance sheet." Minority Report, Commission on Revision of Public Service Commission Law (1930), Vol. I, 345.

tials are necessary: (1) a complete inventory of property, and (2) a pricing of the items in the inventory.

In computing the inventory, it is necessary to obtain the quantity of physical properties by units of measurement. This means that the size and nature of all structures must be determined, the generating equipment must be listed in detail, the poles must be counted and classified as to size and kind and physical conditions, the miles of wire, by kind and size, must be established, the miles of underground conduit and conductors and the kind and nature thereof (even though not visible because they are below the surface of the ground) must be estimated in some fashion. All property units, therefore, must be either counted, measured, or weighed. Furthermore, the inventory, to have the semblance of scientific precision, must show whether the structure, poles, conduits, etc., are imbedded in soft soil, clay, or rock, and these conditions cannot be determined with any degree of certainty, again because, not being visible, they must be the subject of guesswork. The eye cannot see nor the hand measure all the items which must in some manner or other be accounted for in the hypothetical appraisal. Moreover, the physical condition of all the properties, visible and invisible, must be recorded in the field notes, and allowance made for such condition in computing the so-called "observed depreciation." When it is remembered

that telephone, telegraph, and electric power properties extend over enormous areas and the values run into billions of dollars, that all the items represented thereby must be counted, measured, or weighed, it must be recognized that the very method begets errors and must inevitably lead to rampant speculation. It is common knowledge that no two field parties will arrive at the same inventory of physical quantities, and it is likewise common knowledge that a recheck by one field party of the work of another always discloses discrepancies.[1] An analysis and comparison of re-

[1] The inaccuracies in the estimates by engineers employed in the valuation task are thus analyzed in a report of a committee of civil engineers engaged in that work: "The practice of those engaged in valuation work, from the beginning of such work up to the present time, has varied widely in the matter of determining the cost of reproduction. Some base such cost on existing physical conditions, others on historic conditions, and still others combine the two. Some engineers have included only those physical property units which were actually created in the construction of the property, that is, they have used historic conditions, as to items of cost, with present-day prices for labor and material. Others have used substitute units, or historic prices, or original instead of present methods of work, and still others have used original conditions, original prices, and original methods, in making an estimate of reproduction cost. * * * This failure of engineers engaged in valuation practice to agree on a uniform conception of reproduction has cast some doubt on the real worth of Cost of Reproduction as one of the measures of value." *Report of the Special Committee to Formulate Principles and Methods for the Valuation of Railroad Property and Other Public Utilities* in 81 Transactions of the American Society of Civil Engineers 1311, 1359 (1917).

production cost estimates utilized in a large number of rate cases reveals a startling variation in their substance. (See Appendix C, *infra,* pp. 98–107.)

But that is not all. The property items or units, after inventory, have to be assembled, grouped, classified, and then priced. The pricing process is a monstrous example of guesswork.* The present reproduction cost of old equipment which is no longer manufactured can be computed only by some sort of legerdemain. Current prices of such items

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* In analyzing one of the opinions of this Court involving a question of valuation for rate-making purposes, it has been observed: "In addition to the expert guessing contest involved in estimating reproduction cost, according to present or past prices, the opinion also adds an additional gambling factor in requiring 'an honest and intelligent forecast as to probable price and wage levels during a reasonable period in the immediate future.' For at least one hundred years (and probably for several thousand years) commerce has been offering its greatest prizes to men who could make honest and intelligent forecasts of future prices. Today the management of any large business would pour wealth into the lap of the inspired genius who could make such forecasts. The question is presented as to whether, when such forecasts are impossible (as they are most of the time) public utility commissions should make any effort to regulate public utility rates. Relying upon past prices alone, it would become evident in practically every case, by the time the case reached the Supreme Court, that there had not been an 'honest and intelligent forecast' of future prices. The illusion * * * that a reliable forecast of future prices can be made, is on a par with the illusion which also radiates from the opinion, that there is such a thing as a 'relatively permanent price level.'" Richberg, *Value—By Judicial Fiat* (1927), 40 Harv. L. Rev. 567, 572.

are not and cannot be known, but the amount they would cost if they were manufactured in some devious manner must be computed. The cost of labor, involving, in turn, an estimate of labor hours and labor price, must be estimated and myriad items of expense, including hypothetical interest which was never incurred, in some manner determined.

The results so unscientifically computed are necessarily permeated with inaccuracies. That such results are inaccurate is known to every public utilities commissioner. The results of any two engineers arrived at independently are and will be far apart on any large property. (See Appendix C.) In the words of Mr. Justice Holmes, in commenting on a rate case, "every figure that we have set down with delusive exactness [is] speculative." *City of Louisville* v. *Cumberland Telephone and Telegraph Co.*, 225 U. S. 430, 436. As pointed out by the former chairman of the Public Service Commission of Indiana, "no two engineers, taking the same property, the same unit prices, and the same locality, can arrive at the same figure." 55 Amer. Bar Assn. Rep. 799 (1930). Commissioner Joseph B. Eastman of the Interstate Commerce Commission in a concurring opinion in the *O'Fallon Railway* case said: "With cost of reproduction now exceeding original cost in most cases by anywhere from 50 to 80 percent, it is clear that a method of determining value for rate-making purposes which

leaves to unguided judgment the weight to be given such widely divergent factors cannot produce satisfactory results and must be made more definite" (124 I. C. C. 3, 52).

A classical example of the wide variations in determining fair value under the reproduction cost theory is contained in the dissenting opinion of Mr. Justice Stone in *West* v. *Chesapeake & Potomac Telephone Company*, 295 U. S. 662, 691, note 7. The reference shows the following variations in results obtained by engineering appraisals of the telephone property as found in the record of *New York Telephone Company* v. *Prendergast*, 36 F. (2d) 54:

Estimating body	Valuation	Increase over the Commission valuation
Majority of Commission	$366,915,493	
Statutory Court	397,207,925	8.2%
Minority of Commission	405,502,993	10.5%
Master's report	518,109,584	41.2%
Company claim based on Whittemore appraisal	528,753,238	44.1%
Company claim based on Stone & Webster appraisal	615,000,000	67.1%

There was in that case a possible error of almost two hundred and fifty million dollars. It must be evident that no group of men, no matter how well trained or informed, could by any process of reasoning come to any proper conclusions from the so-called evidences of value in that case. Only by arbitrary or capricious action could any finding of fair value be agreed upon by a group of men

charged with that duty. It is submitted that a method which is so inherently defective and inevitably unreliable cannot qualify as a *sine qua non* of reasonableness in law.[9]

The experience cited above is not isolated or unique; it is typical of the prevailing experience of all regulatory bodies which deal with "fair value." There is shown in Appendix "C," *infra* p. 98, a comparison of estimates of reproduction cost arrived at in 123 rate cases reported for the years 1928 to 1933, inclusive. *The average variation is shown to be 51.50 percent.*

[9] As to the significance of the *New York Telephone* case, *supra*, the following observation has been made: "Herein lies the real significance of this case. While it may have lasted considerably longer than the average utility rate proceeding, it is nevertheless typical of the problems and difficulties involved in all rate cases. It illustrates particularly the fact that the *measure* of return to which a utility is entitled is never clear and definite under the prevailing regulatory system. The reciprocal rights of the utilities and the public remain undefined and variable even after most exhaustive investigation. The more thorough the work, the longer it lasts and therefore the more likely it becomes obsolete before final decision. * * * This lack of definiteness as to the fundamental factors of rate control is the bane of the existing regulatory process. It is responsible for virtual breakdown of regulation. It creates and perpetuates conflict of interest. It produces trumped-up evidence, protracted hearings, futile appeals, prohibitive expense, and makes systematic regulation as a regular administrative process an impossibility." Gold, An Example of Rate Litigation and Its Significance (1934), 23 Nat. Mun. Rev. 584, 587.

This court may reasonably conclude from its own knowledge and from the facts disclosed in Appendix C that the reproduction cost estimates of the properties of a large public utility can be little more than a matter of conjecture or speculation. Regulatory agencies, it is respectfully submitted, ought not to be compelled, against their better judgment, to resort to conjecture and speculation in fixing the prices of services which are so vital to the comfort, well-being, and convenience of our citizens. This Court said in the *West* case, *supra*, 295 U. S. at 675:

> It is apparent from what has been said that here the entire method of the commission was erroneous and its use necessarily involved unjust and inaccurate results.

That method (the improper use of price indices) was condemned because it produced unjust and inaccurate results. We submit that a method of rate making which *requires* as an essential component a consideration of reproduction cost is open to even graver objection. The fair-value theory, with its concomitant emphasis on reproduction cost, should not be imposed upon those charged with the duty of seeing that utilities and consumers alike are treated fairly in the fixing of rates.

The "fair value" method of rate-making has led to conclusions demonstrably unsupportable in the face of actual experience. The "fair value" of a utility's property may be many times the actual

cost of that property and if, under such circumstances, rates are fixed which fail to yield a "fair return" on this "fair value," those rates must be condemned as confiscatory under the doctrine of *Smyth* v. *Ames, supra.* And this is true no matter how successfully the Company may be able to operate under them, or how liberal the dividends it can pay, or how good the company's credit may be, or what return such rates may afford the Company on its investment prudently made in properties used or useful in the public service. Thus, confiscatory rates under the "fair value" test may enable a utility to operate with outstanding success because confiscation is determined by a method which has no relation to the object sought to be attained. The glaring incongruity between theoretical "fair value" and the actual facts of experience was well illustrated by *Lindheimer* v. *Illinois Bell Telephone Company,* 292 U. S. 151, in which this Court found the theory pursued irreconcilable with the actualities of operation.

No more fatal indictment can be presented against the "fair value" doctrine than that which is offered by the spectacle of successful and prosperous public utilities revealing themselves as the victims of constitutional confiscation upon the criterion of the "fair value" rule. See the dissenting opinion of Mr. Justice Black in *McCart* v. *Indianapolis Water Co.,* 302 U. S. 419, 435. When public utilities find it expedient, as they frequently

do, to charge rates lower than those to which they are constitutionally entitled under the doctrine of *Smyth* v. *Ames, supra,* they reveal the true character of the fair-value method of rate making.[19]

C. The rule produces a break-down in the regulatory process

The fair-value rule has proved to be unworkable as part of a regulatory process. The reasons are: (1) the time required to make appraisals and valuations; (2) the unreliability of the results of that method; and (3) the enormous expense involved.

The valuation process, requiring as it does the taking of field inventories and the pricing of the inventory items, cannot be accomplished in a short space of time. Many years are frequently required and assumption upon assumption is made before the speculative result is reached. The long time required to complete a rate case has become common knowledge. The *Ohio Bell Telephone* case, 301 U. S. 292, was in process of adjudication about fourteen years. The Missouri Public Service Commission required over 8 years to reach a determination in its proceedings against the Union Electric Light and Power Company, 17 P. U. R. (N. S.)

[19] The presidents of the prosperous Consolidated Gas and New York Edison Companies testified before the Committee on the Revision of the New York Public Service Commissions Law of 1930, that it was the policy of their companies to charge rates lower than those to which they were constitutionally entitled. Minority Report, *Commission on Revision of Public Service Commissions Law* (1930), Vol. I, 351.

337; and over 7 years in its proceedings against the Ozark Utilities Company, 18 P. U. R. (N. S.) 408. The North Dakota Board of Railroad Commissioners required almost 3 years in its proceedings against the Northern States Power Company, 15 P. U. R. (N. S.) 126. The New York Public Service Commission consumed at least 5 years in determining reasonable rates for the Long Island Lighting Company, 18 P. U. R. (N. S.) 65. Twenty-seven months after the initiation of its proceedings against the Westchester Lighting Company (15 P. U. R. (N. S.) 299) that Commission stated:

> To continue this proceeding to completion would require the receipt of additional testimony and evidence on the reproduction cost new of used and useful property—probably both by the company on its own behalf and by the Commission on behalf of the public—depreciation with respect thereto, rate of return, as well as completion of the testimony on and possible additional evidence relating to the market value of land and going value. Judging from past experience, at least another two years would probably be consumed in the presentation of this necessary material, which in return would require that the operating revenues, expenses, and any changes during this period be investigated and evidence presented thereon to bring them down to the date of the final determination.

In his dissenting opinion in the *McCart* case, *supra*, Mr. Justice Black included the following

table to illustrate the delays in rate litigation (302 U. S. 435):

	Bill filed	Decided	Time
United Fuel Gas Co. v. Railroad Comm'n, 278 U. S. 300	Dec. 1923	Jan. 1929	5 years.
United Fuel Gas Co. v. Public Service Comm'n, 278 U. S. 322	April 1925	Jan. 1929	3 yrs. 8 mos.
Ottinger v. Brooklyn Union Gas Co., 272 U. S. 579	June 1923	Nov. 1926	3 yrs. 5 mos.
Ottinger v. Kings County Lighting Co., 272 U. S. 579	June 1923	Nov. 1926	3 yrs. 5 mos.
Ottinger v. Consolidated Gas Co., 272 U. S. 576	June 1923	Nov. 1926	3 yrs. 5 mos.
Patterson v. Mobile Gas Co., 271 U. S. 131	Aug. 1922	April 1926	3 yrs. 8 mos.
McCardle v. Indianapolis Water Co., 272 U. S. 400	Dec. 1923	Nov. 1926	2 yrs. 11 mos.
Average			3 yrs. 7 mos.

The proceedings before the Illinois Commerce Commission to determine rates for the Illinois Bell Telephone Company, initiated in September 1921, did not reach a final conclusion until 12½ years later, in 1934. See *Lindheimer* v. *Illinois Bell Telephone Co.*, 292 U. S. 151. More than ten of these years were consumed in litigation in the federal courts subsequent to the Illinois Commission's findings in the case. The *New York Telephone Company* case was instituted in 1920 and determined by the New York Public Service Commission in 1924, yet it was not until 1934 that the case was finally settled. See the concurring opinion of Mr. Justice Brandeis in *St. Joseph Stockyards Co.* v. *United States*, 298 U. S. 38, 90.

It is impossible to keep the regulatory process current under the prevailing rule, and unless that rule is changed the paralyzing delays in fixing

proper rates which it makes inevitable will continue to cripple utility regulation.[11] Many utilities in the United States have never had their property valued and others have had but one valuation in the comparatively long history of valuation in this country. This Court is familiar with the experience of the Interstate Commerce Commission in its efforts to arrive at the fair value of railroad properties in this country. During the period from 1913 to 1931, approximately $178,000,000 was ex-

[11] Concerning the inability of regulatory authorities to carry on their function of rate making under the present system of valuation, one writer has observed that "it slows up regulation and in a great measure makes it ineffective. In practice it takes so much time to decide the question of rates when it is dependent upon a valuation, that, at best, but few cases can be decided by a state authority in a year. Where the authority has a hundred or more companies under its supervision, as is usually the case, it is obvious that there can be but little regulation of their rates. Regulation, to be effective, should be reasonably prompt. If the company needs relief, it should receive it promptly; otherwise the relief prayed for may not suffice when granted, as during the time of protracted hearings the situation may be going from bad to worse and the loss must be compensated by additional increases in the rates. On the other hand, if the public is entitled to a reduction it should receive it promptly, as earnings, by the decisions of the courts, become the property of the corporation and any excess in rates paid by the consumer can never be recovered by him. * * *" Attwill, *Weaknesses of the Valuation System*, 159 Annals of the American Academy of Political and Social Sciences (January 1932) 96, 98. The author is a former chairman of the Massachusetts Department of Public Utilities.

See also Goddard, *The Evolution and Devolution of Public Utility Law*, 32 Mich. L. Rev. 577 (1934).

pended by the Government and by Class I carriers in their attempt to carry out the valuation process. (Testimony of Mr. Alfred P. Thom, General Counsel of the American Railway Executives Association before the Committee on Interstate and Foreign Commerce of the House of Representatives, February 5, 1932.) It is common knowledge that the difficulty in the application of the rule of *Smyth* v. *Ames, supra,* to railroad valuation was in no small measure the direct cause of the amendment of Section 15a of the Interstate Commerce Act to eliminate the necessity of recurrent valuations. (See testimony of Commissioner Joseph B. Eastman before the Committee on Interstate and Foreign Commerce of the House of Representatives, January 19, 1932.)

The very involvements of the fair value method destroy it as a rate-making expedient. With some fluctuations in price occurring daily, valuations made as of one year, after many years of effort, are obsolete by the time they are determined. When it is remembered that frequently several years are required to make an inventory and appraisal, which becomes obsolete twelve months thereafter, the criticism that the regulatory process is unworkable must be recognized as well founded. No approved process whereby valuations such as discussed herein can be kept current or computed quickly has ever been devised. One noteworthy attempt designed to accomplish this purpose,

namely, the use of index numbers, was condemned by this Court in the *West* case, *supra*.

The inherent difficulties in administration as well as the inadequacy of the result of the use of the "fair value" rule have led to various schemes for avoiding its harshness and for speeding up the regulatory process. The most notable of these expedients is the Pennsylvania temporary rate statute involved in this case. Regulation must be free from unworkable formulae or Commission regulation is doomed, for the public is becoming increasingly weary of the long, expensive, and tedious procedure involved in public utility rate-making.

The unreliability of the results reached by an attempt to apply the fair value theory has already been dealt with in this brief. Pages 6-20, *supra*.

The third factor is the enormous cost of the process. The making of appraisals with the necessary time and tedious detailed studies costs gigantic sums.[12] While schemes for surmounting

[12] Former Chairman William Prendergast of the Public Service Commission of New York has stated that the appraisal made by the New York Telephone Company cost that Company in the neighborhood of $5,000,000 (Commission on Revision of Public Service Commissions Law (1930), Vol. I, 381). It is estimated that the cost of determining the fair value of all utilities subject to the jurisdiction of the Public Service Commission of New York, even with the cooperation of the utility companies and the adoption of short-cut methods, would run in the neighborhood of $10,000,000 and at least three years would be necessary to arrive at the result. (Minority Report, *Commission on Revision of Public Service Commissions Law* (1930), Vol. I, 394).

the difficulty have at times been evolved such as that for assessing the regulatory expenses against the utilities as in Louisiana (Gen. Stats. 1932, Secs. 7917.3 to 7917.5), New York (Laws, 1934, C. 282), Pennsylvania (Stats. 1920, Sec. 18163), and Wisconsin (Wis. Stat. C. 196, Sec. 85), the consuming public in the end bears the cost.[13]

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[13] The expenses involved in valuation projects for rate-making purposes have been graphically described by Harry R. Booth, General Counsel of the Illinois Commerce Commission, as follows: "In connection with a case recently decided by the Illinois Commerce Commission, the Illinois Bell Telephone Company stated in its annual report that it had spent $1,200,000 in preparation of a state-wide appraisal, and this was subsequent to huge expenditures in the *Chicago Telephone* case. In proceedings before the same Commission involving the Commonwealth Edison Company of Chicago, the company's expenditures totaled approximately $1,000,000, a large part of which was for appraisals; and the People's Gas Light & Coke Company, also of Chicago, spent in excess of $750,000, more than $600,000 of which was for appraisal purposes. In Missouri, two recent cases involved expenditures, mostly for appraisal purposes. Of over $900,000 by the Union Electric Company and nearly $300,000 by the Laclede Gas Light Company, including the Commission's expenses in both cases. * * * By some authorities it is stated that a complete reproduction cost appraisal may be expected to cost from one-half of a per cent to one per cent of the reproduction cost of the property in question. Hence, for the electric, gas, and telephone companies alone, which are reported in *Moody's Manual of Public Utilities for 1937* as having a property value of over $20,000,000,000, the cost of making reproduction cost appraisals might run from $100,000,000 to $200,000,000. * * * The costs incurred by utility companies for such valuations are ordinarily charged to operating expenses, with the result that they are, in effect, paid for by the consumers. Costs in-

The burdens of present day rate-making have been so great that commissions have frequently abandoned the attempt to secure through normal channels of regulation reductions in rates to which consumers were entitled. The New York Commission has stated that "consumers have appreciated that it is better to secure a reduction in rates promptly, even though it may not be as large as should be made, in their opinion, and even though it may not be as large as might be ordered by the Commission after a rate case had been conducted, extending over months and perhaps years, and possibly to be litigated in the courts. * * * It may be pointed out that practically the Commission can cover a wider territory and deal with many more cases by negotiation than it can through formal proceedings. The latter consume far more time of the Commission and its limited staff, with the result that where negotiations with ten companies may be concluded in a few months, it would require several years to make the inventories, appraisals, accounting reports, and engineering investigations which rate cases would require." *1931 Annual Report New York Public Service Commission,* Vol. I, p. 8.

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curred by cities and public service commissions are ordinarily paid for out of taxes, which fact, of course, exerts a distinctly discouraging influence." Booth, *Prudent Investment, Fair Value and Public Utility Regulation*, 1 Nat. Lawyers Guild Q. 229, 235 (June 1938).

The Public Service Commission of Maryland has stated that it "has been making a study of the operating results of the various utilities under its jurisdiction and where its studies show that there is at least a possibility of effecting a rate reduction it is conducting informal negotiations with the utilities involved, so that the public may receive the benefits of such reductions as may be found to be reasonable and proper without undue delay." *1932 Report of Maryland Public Service Commission 4.*

The Committee on Valuation of the American Electric Railway Association has pointed out the hazards and burdens to the utility industry itself:

> Such valuation proceedings, as heretofore conducted, are excessively costly, require a long period of time, affect adversely the corporation's credit, interfere with its financing upon favorable terms, and frequently cause the postponement of extensions and improvements to the great detriment of the public. Unless and until there is some change in the legal principles which must be applied in determining fair value, however, the industry cannot escape from this situation.[14]

If public regulation of utility rates is to succeed, these unwarranted burdens on industry, the public, and the commissions must be removed. The eco-

[14] Report of the Committee on Valuation of the American Electric Railway Association (1934).

nomic waste involved in the fair value method must be eliminated and there must be substituted a plain and adequate remedy. The fair value doctrine has had a fair trial, but by the verdict of forty years of regulatory experience it has been found hopelessly wanting.

II. Prudent Investment as a Rate Basis is Sound and Workable

A. The basic fallacy underlying the fair-value doctrine is the assumption that "value" rather than "property" has been devoted to the public use. As previously indicated, the object sought to be attained by the limitations of the due process clause is just compensation to those who have devoted their property to the public use. What the Constitution requires is a fair rate of return on the investment of a utility in property used and useful in the public service. The thing devoted to the public use by the investor is not specific property but capital embarked in the utility enterprise. Upon the capital so invested the due-process clause of the Constitution guarantees to the utility the opportunity to earn a fair return. The Constitution does not guarantee to a utility or its investors the opportunity to earn a return either on the "present value" of all the property used by the enterprise or the "cost of reproducing" the property used by the enterprise. This interpretation of due process of law was stated by Mr. Jus-

tice Brandeis in his concurring opinion in the *Southwestern Bell Telephone* case, *supra,* as follows (262 U. S. at 290–291):

> The investor agrees, by embarking capital in a utility, that its charges to the public shall be reasonable. His company is the substitute for the State in the performance of the public service; thus becoming a public servant. The compensation which the Constitution guarantees an opportunity to earn is the reasonable cost of conducting the business. Cost includes not only operating expenses, but also capital charges. Capital charges cover the allowance, by way of interest, for the use of the capital, whatever the nature of the security issued therefor; the allowance for risk incurred; and enough more to attract capital. The reasonable rate to be prescribed by a commission may allow an efficiently managed utility much more. But a rate is constitutionally compensatory, if it allows to the utility the opportunity to earn the cost of the service thus defined.

This view of investment as the vital factor accords with the position of economists. As stated by Professor Glaeser of the University of Wisconsin:

> Since public utilities render a service which must be supplied continuously, they should be regulated upon a theory that they are or will become going concerns. They are secured in their market position by means of governmental grants which are either ex-

> pressly monopolistic or tend to become such under the pressure of noneconomic competition. They have voluntarily invested their capital upon the implied assurance that they will be permitted to earn reasonable returns. Under modern conditions of regulation the investment of capital may even be compelled by governmental authorities or it is at least invested subject to governmental authorization and approval. Under these conditions of regulated monopoly, the true economic standard for determining the rate base is the investment standard.[15]

B. Prudent investment affords a stable rate base, with all its accompanying advantages to investors and consumers. These have been summarized in the opinion of Mr. Justice Brandeis, concurring in the *Southwestern Bell Telephone Co.* case, *supra*, 262 U. S. 276, 289, 306:

> The adoption of the amount prudently invested as the rate base and the amount of the capital charge as the measure of the rate of return would give definiteness to these two factors involved in rate controversies which are now shifting and treacherous, and which render the proceedings peculiarly burdensome and largely futile. Such measures offer a basis for decision which is certain and stable. The rate base would be ascertained as a fact, not determined as matter of opinion. It would not fluctuate with

[15] Glaeser, *Outlines of Public Utility Economics* (1927), 505.

the market price of labor, or materials, or money. It would not change with hard times or shifting populations. It would not be distorted by the fickle and varying judgments of appraisers, commissions, or courts. It would, when once made in respect to any utility, be fixed, for all time, subject only to increases to represent additions to plant, after allowance for the depreciation included in the annual operating charges. The wild uncertainties of the present method of fixing the rate base under the so-called rule of *Smyth* v. *Ames* would be avoided; and likewise the fluctuations which introduce into the enterprise unnecessary elements of speculation, create useless expense, and impose upon the public a heavy, unnecessary burden.

Investors rightly expect a return on the capital which they put into the enterprise rather than on the imaginary fair value or reproduction cost of the property.[16] The advantages of a stable rate

[16] "It is a fair assumption that, in general, investors in establishing public utilities have looked to a fair return on their actual investment to compensate them for their outlay, and have not taken seriously into account any appreciation or depreciation in the value of land or in the price of labor and materials entering into the reproduction cost of structures and equipment. They have necessarily assumed that they would be able and would be permitted to receive for their service an amount equal to their actual cost of production, *i. e.*, operating expenses, depreciation, and interest and profits on their actual capital outlay. * * *. The normal actual capital cost as a basis for rate determination, moreover, has a distinct advantage from the standpoint of public

base from the standpoint of investors in the enterprise were thus emphasized by a committee of the Investment Bankers Association:

> So nearly as possible, a stabilized basis of property valuation should be developed. This is easier said than done, but candid effort can surely remove some of the chief causes of instabilities that are dependent on variations in commodity price levels and in varying rates of depreciation and obsolescence. Present deflation of values but emphasizes the disturbing effect of too fluctuating bases of value. To arrive at what is fair will call for mutual concessions—from public regulatory bodies, of preconceived notions that often have reflected political expediency rather than economic and basic considerations; from private ownership, of other preconceived ideas of the rights of private property in a regulated business imbued with a public responsibility and trust. Preconceived notions need to be reappraised or set aside, in favor of the answer to be found only after an un-

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policy. It is desirable that rate schedules should have stability and should not fluctuate with the price of iron pipe or copper wire or with real-estate activity or reactions. A utility is not established for the purpose of speculating in copper wire or iron pipe or land. It must, however, in furnishing its service, invest its money permanently in these things. The utility should not be expected to assume the risks of fluctuations in the price of the land and materials it uses." Whitten, *Fair Value for Rate Purposes*, 27 Harv. L. Rev. (1914) 419, 425–426.

biased solution that will more nearly represent public and private rights than any yet applied. This Committee cannot but believe that a sound economic solution will sooner or later receive judicial sanction."[17]

The advantages from the standpoint of the consuming public and the regulatory commissions are self-evident. Protracted, costly, and unsatisfactory controversies over valuation are obviated. Rates can be fixed currently, with a minimum of delay. These considerations are among those that have led many state utility commissions to advocate the adoption of the prudent investment standard.[18]

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There are special reasons which make it appropriate to reconsider the rule of fair value and to replace it with the principle of prudent investment.

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[17] Commercial and Financial Chronicle (November 21, 1931).

[18] The State commissions have been strongly in favor of the prudent investment rate base advocated by the Utility Consumers National Policy Committee. They have been in favor of it, among other reasons, because of the expense and delay caused by minute valuations of utility plants and the many speculative, technical, and highly controversial features such valuations involve. This attitude of the state commissions was referred to in the dissenting opinion of Mr. Justice Brandeis in the *Southwestern Bell Telephone Case* in favor of prudent investment at the rate base." Spurr, *Has Utility Regulation been Reduced to Negotiation and Wheedling?* 21 Pub. Util. Fort. 262 (1937).

The rule of *Smyth* v. *Ames, supra,* was perhaps the only standard which could have been applied at the time it was enunciated by this Court. In 1898, when the rule was announced, regulatory accounting was practically nonexistent in most states. The modern movement toward uniform accounting methods and procedure for local utilities started with the Wisconsin and New York systems which were promulgated in 1908.[19] Since that time, however, accounting regulation has become a major function of public service commissions so that today approximately forty commissions have prescribed a system of accounts for electric utilities. Appendix D of this brief, *infra,* p. 107, contains a list of the state commissions which possess such authority over the accounting practices of public utilities.

It is common knowledge that large amounts of inflation crept into the property accounts of steam railroads during the construction era of their development. Consequently, the accounting book figures in 1898 were wholly unreliable as a basis upon which to compute a just and proper rate.[20] It would appear too from the cases starting with *Munn* v. *Illinois,* 94 U. S. 113, and ending with

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[19] Bentley, *Bibliography of Works on Accounting by American Authors* (1935), Vol. II, 336.

[20] *Report of the Federal Trade Commission to the Senate of the United States on Public Utility Corporations,* January 28, 1935, *Op. cit.* note 1.

Smyth v. *Ames, supra,* that the courts were in a dilemma and were seeking the most reasonable approach to a difficult and troublesome problem. See the opinion of Mr. Justice Brandeis, concurring, in *Southwestern Bell Telephone Company* v. *Public Service Commission,* 262 U. S. at 298–299. The fair value theory in the economic era prevailing in 1898 was about the only theory at that stage of regulatory accounting which appeared to present any satisfactory solution to the problem. It was probably assumed that reproduction cost could be ascertained with a high degree of accuracy. But the intervening forty years have demonstrated beyond peradventure of a doubt that inaccuracy is the most notable feature of reproduction cost appraisals. *Bay State Rate Case,* P. U. R. 1916F, 221, 233. The fair value rule has thus been explained historically:

> With construction reaching back into a dim accounting past, or with the early books destroyed, it is little wonder that in the earlier cases the courts turned away from actual cost, deeming it a thing which could not be ascertained and looked with welcome on estimates of reproduction cost which they were led to believe could be accurately made and readily verified.[21]

When it is considered that we have now had a long period of accounting and security regulation

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[21] Whitten & Wilcox, *Valuation of Public Service Corporations* (2d Ed. 1928), Vol. I, 530.

as well as control of mergers and consolidations of utility properties it must be recognized that the situation which called for the decision of *Smyth* v. *Ames, supra,* is no longer existent. When that decision was rendered by this Court it was not generally appreciated that the fair value theory becomes more complicated and difficult of application as utility properties grow in size and expand their operations.[22] What might have been a simple rule thirty years ago becomes today a confounding rule when applied to the huge interstate public utilities like those which are subject to the jurisdiction of federal regulatory agencies. It is important to note here that the present trend of public utility development is toward the merger of operating companies into increasingly larger units.

Despite the fact that this Court has repeatedly approved the doctrine of *Smyth* v. *Ames, supra,* to limit the authority of state regulatory bodies to utilize the prudent investment standard, it has nevertheless been advocated by many state commissions. The Massachusetts Commission has stated:

> * * * in the long run, the rate-paying public as well as the investing public will be best served if regulation makes as its *fundamentally guiding principle* an attempt

[22] Goddard, *The Evolution of Cost of Reproduction,* 41 Harv. L. Rev. (1927) 550, 566–567.

> to protect investments honestly and prudently made and wisely managed. Any other theory * * * makes every rate case an almost interminable and labyrinthine inquiry into values with endless conflicts between so-called experts.[23] [Italics in original.]

In one of its recent cases the California Railroad Commission stated that its advocacy of the prudent investment theory was based on the following considerations:

> The historical method of valuation * * * in rate proceedings is well grounded upon established facts, is not subject to the vagaries of pet theories, unlimited imagination and abrupt fluctuations of current prices and passing conditions, and therefore, indicates a truer measure of value upon which, through the application of rates, a return may be allowed to reimburse the owner for his enterprise and insure the integrity of his capital honestly and prudently invested. * * *[24]

The same commission has expressed the same opinion in many other of its cases. *National City*

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[23] *Second Annual Report of the Public Service Commission of Massachusetts* (1914), Vol. I, 99, 107. See also the opinion of the former Chairman of the Massachusetts Department of Public Utilities contained in an article devoted to the work of that agency. Attwill, *Weaknesses of the Valuation System*, 159 Annals of the American Academy of Political and Social Sciences (1932), 96.

[24] *Re Pacific Gas & Electric Co.*, 1 P. U. R. (1933) (N. S.) 1.

v. *Sweetwater Water Corp.* (1933), 3 P. U. R. (N. S.) 405; *Re Coast Valleys G. & E. Co.*, P. U. R. 1924C 40; *Re Southern California Telephone Co.*, P. U. R. 1922C 97; *Re San Joaquin Light & Power Corp.*, P. U. R. 1922D 595; *Re Fresno Traction Co.*, P. U. R. 1925C 566. The prudent investment theory has in fact been discussed and advocated in many decisions by local commissions as a sound solution to the existing difficulties of the rate-making procedure.[25] Following the decision of this Court in the *Pacific Gas & Electric Company* case, 302 U. S. 388, the Wall Street Journal on December 28, 1937, published the results of a

[25] *Re Sea Cliff & G. C. Gas Co.* (New York Public Service Commission), P. U. R. 1921A, 211; *Re Boise Artesian Water Co.* (Idaho Public Utilities) (1923), 11 Ann. Rep. Idaho Public Utility Commission 155; *Marinette* v. *City Water Co.* (Wisconsin Public Service Commission) (1934), 9 P. U. R. (N. S.) 308; *Milwaukee El. R. & Light Co.* v. *Milwaukee* (Wisconsin Public Service Commission), P. U. R. 1918E, 1; *Re Northern States Power Co.* (North Dakota Board of Railroad Commissioners), 15 P. U. R. (N. S.) 126; *Grand Forks* v. *Red River Power Co.* (North Dakota Board of Railroad Commissioners) (1935), 8 P. U. R. (N. S.) 225; *Barth* v. *Hughes D. Electric Co.* (North Dakota Board of Railroad Commissioners), P. U. R. 1922A, 740; *Re Midwest Power Co.* (North Dakota Board of Railroad Commissioners), P. U. R. 1922E, 22; *Cavanaugh* v. *Whitefish Municipal Water Utility* (Montana Board of Railroad Commissioners), P. U. R. 1922E, 198; *Re Platte County Independent Telephone Co.* (Nebraska State Railway Commission), P. U. R. 1922D, 303; *Pacific T. & T. Co.* v. *Thomas* (Oregon Public Utilities Commission) (1936), 13 P. U. R. (N. S.) 337.

survey of the views of the various state regulatory commissions on the question of "fair value." The commissions that expressed their preference were two to one in favor of the prudent investment basis as the best solution to the rate-making problem. The advocacy of the prudent investment doctrine by these agencies is overwhelmingly supported by a great body of professional opinion.[28] We have

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[28] Wilson, Herring and Eutsler, *Public Utility Regulation* (1938) 126; Bonbright, *The Valuation of Property* (1937), Vol. II, 1081; Mosher and Crawford, *Public Utility Regulation* (1933) 192; Glaeser, *Outlines of Public Utility Economics* (1927) 505; Jones and Bigham, *Principles of Public Utilities* (1931) 239; Goddard, *Public Utility Valuation* (1916), 15 Mich. L. Rev. 205; Hale, *The "Physical Value" Fallacy in Rate Cases* (1921), 30 Yale L. J. 710; Richberg, *A Permanent Basis for Rate Regulation* (1922), 31 Yale L. J. 263; Whitten, *Fair Value for Rate Purposes* (1914), 27 Harv. L. Rev. 419; Egerton, *Value of the Service as a Factor in Rate Making* (1919), 32 Harv. L. Rev. 516; Henderson, *Railway Valuation and the Courts* (1920), 33 Harv. L. Rev. 902, 1031; Dobie, *Judicial Review of Administrative Action in Virginia* (1922), 8 Va. L. Rev. 477, 504; Bonbright, *Railroad Valuation With Special Reference to the O'Fallon Decision* (1928), 18 Amer. Econ. Rev. Supp. 181; Bauer and Gold, *The Economic Merits of Original Cost and Reproduction Cost* (1928), 41 Harv. L. Rev. 593; Bauer, *Reproduction Cost and Desirable Public Utility Regulation* (1926), 2 J. of Land and Public Utility Economics 408; Beutel, *Valuation as a Requirement of Due Process* (1930), 43 Harv. L. Rev. 1240; Booth, *Prudent Investment, Fair Value and Public Utility Regulation* (1938), 1 Nat. Lawyers Guild Q. 229; Glaeser, *Comments on Legislation and Court Decisions* (1925), 1 J. of Land and Public Utility Economics 250; Goddard, *The Evolution of Cost of Repro-*

set out in Appendix A, *infra*, pp. 42–94, a summary and analysis of reasoned expressions of this character.

The rule of prudent investment, combining as it does exactness, ease of application, and a proper principle for the determination of just compensation, is the standard for rate-making best adapted to modern business conditions and practice in this country.

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duction (1927), 41 Harv. L. Rev. 550; Gold, *An Example of Rate Regulation and its Significance* (1934), 23 Nat. Municipal Rev. 584; Hale, *Conflicting Judicial Criteria of Utility Rates* (1938), 38 Col. L. Rev. 959, 977; Lilenthal, *Regulation of Public Utilities During the Depression* (1923), 46 Harv. L. Rev. 745; Richberg, *The Supreme Court Discusses Value* (1924), 37 Harv. L. Rev. 289; Richberg, *Value—By Judicial Fiat* (1927), 40 Harv. L. Rev. 567; Wheat, *The Present As Compared With Original Cost of Construction* (1937), 20 Pub. Util. Fort. 3; Wheat, *The Regulation of Interstate Telephone Rates* (1938), 51 Harv. L. Rev. 846; Willis, *Significant Changes in Public Utility Law* (1937), 25 Georgetown L. J. 877.

APPENDIX A

EXPRESSIONS OF OPINION ON THE DOCTRINE OF SMYTH *v.* AMES AND ON THE RULE OF PRUDENT INVESTMENT

INTRODUCTION

Since the decision of this Court in *Smyth* v. *Ames*, there has been extensive discussion of the proper basis for public-utility rate regulation. From the first the use of reproduction cost as a factor has been the subject of acute controversy. The need for reexamination of the question in the interest of effective regulation has been thus emphasized:

> The issue between reproduction cost and actual cost, in relation to "fair value" on which a "fair" return must be allowed, is of grave public importance. It leads to the question whether rate regulation is to be a success or failure, and whether regulation should be continued or abandoned. It has been under almost constant discussion during the last 10 years, and has been the chief object of contention in a vast amount of litigation, and in spite of the almost endless discussion and litigation, there is no legal-economic subject which is more confused and in need of scientific clarification. (Bauer, John, *Reproduction Cost and Desirable Public Utility Regulation,* 2 Journal of Land and Public Utility Economics 408 (1926).)

In order to provide a certain amount of the clarification thus urgently needed, an analysis of the literature on the subject of valuation has been made. It is believed that a brief résumé of the principal

arguments will be of assistance in an attempt to establish a sound rate base. The arguments are set forth below under appropriate subtitles.

1. The illusive character of "reproduction cost"

The most serious as well as the most obvious defect in the use of reproduction cost as a factor in the determination of utility rates is its utter lack of precision. The idea of reproduction cost is, at first blush, a simple one, and might in fact be workable in the case of a property of small size and little complexity.

> The original conception of reproduction undoubtedly grew out of simple conditions, such as would be met in estimating the cost of reproducing a building or a single structure. In this case, the difference between the original cost of the building or structure and the reproduction estimate would be due wholly to changes in prices of labor and materials and the change in methods of doing work. (American Society of Civil Engineers, *Valuation of Public Utilities,* 81 Transactions (1917) p. 1362.)

The difficulty is that a utility comprises a vast amount of property which is both far-flung and exceedingly complex.

> This simplicity of condition does not obtain in the case of a great property, the actual construction of which has extended over many years, many of the plant units of which have been renewed or replaced by larger ones than were originally installed, which has undergone changes and alterations, and the history and records of which have not been kept fully and completely. In

> such a case the making of a complete estimate of the cost of replacement or reproduction is a very involved undertaking. (*Id., loc. cit.*)

The result of this situation is not only that the determination of reproduction cost is extremely difficult, but, as has been pointed out, no two experts can reach an agreement upon the figure to be used.

> To this criticism of the vagueness of the court's rule as to valuation can be added another, namely, the practical difficulty of making any valuation at all. In every case examined, there has been a great conflict in evidence. Often, when two valuation experts have been employed by the same party, these experts have each made valuations that differed by a great amount. The difficulty seems to be that of making any accurate valuation of the various assets, tangible and intangible, that make up the plant of a modern public utility. (Howell, Ben R., *Recent Developments in the Application of the Rule of Smyth* v. *Ames in Valuation Proceedings in the Federal Courts,* 3 Tex. L. Rev. 412, 432 (1924).)

This difficulty is also recognized by the Committee on Valuation of the American Society of Civil Engineers:

> The practice of those engaged in valuation work, from the beginning of such work up to the present time, has varied widely in the matter of determining the cost of reproduction. Some base such cost on existing physical conditions, others on historic conditions, and still others combine the two. Some engineers have included only those physical property units which were actually created

in the construction of the property, that is, they have used historic conditions, as to items of cost, with present-day prices for labor and material. Others have used substitute units, or historic prices, or original instead of present methods of work, and still others have used original conditions, original prices, and original methods, in making an estimate of reproduction cost.

This failure of engineers engaged in valuation practice to agree on a uniform conception of reproduction has cast some doubt on the real worth of Cost of Reproduction as one of the measures of value. (American Society of Civil Enginers, *Valuation of Public Utilities,* 81 Transactions (1917), p. 1359.)

An example of the divergence of expert opinion upon the reduction cost of a utility is set forth below, from an analysis of the New York Telephone case:

The range of "values" in this case reveals that the doctrine of present value is totally devoid of elements for objective tests. For the same property as of the same date, July 1, 1926, there were six different estimates of the fair "value" and fair "return" of the New York Telephone Company for rate-making purposes:

Estimates of fair profits for New York Telephone Company (on intrastate business as of July 1, 1926)

	Fair value	Rate	Fair return
Majority of Public Service Commission	$366,915,493	7%	$25,635,000
Federal Court	397,207,925	7%	27,804,555
Minority of Public Service Commission	405,502,993	8%	32,480,000
Special Master's Report	518,109,584	8%	41,448,777
Company claim based on Whittemore appraisal	528,753,738	8%	42,300,299
Company claim based on Stone & Webster	615,000,000	8%	49,200,000

> The estimates of value thus ranged from $366,915,493 to $615,000,000, with a corresponding spread in the return thereon from $25,635,000 to $49,200,000. Between the two valuation estimates by the Company's own experts there was a disparity of more than $86,000,000. Yet all these estimates purported to be based on the requirements of Supreme Court decisions, and at the end of ten years the final guess remains in doubt! Moreover, much new capital has been added since the date of these estimates, new problems of depreciation have arisen, and, indeed, the whole process of valuing the property now in use, must, according to the theory of present value, start all over again. (Frankfurter, *The Public and Its Government* (1930), p. 105.)

Similarly the striking variation of estimates in the *Indiana Telephone Case* has been described:

> A typical instance of this difficulty is seen in the case of *Indiana Bell Telephone Co.* v. *Public Service Commission*, in which there was a difference of $4,000,000 between the estimates of two of the commission's engineers. In this same case the difference between the highest valuation offered and the lowest was $19,000,000, or 45 percent of the highest estimate. Experts, working in good faith and including the same items of valuation, arrive at results so far apart as to prove that such proceedings are of little value in determining the true worth of the property. It can thus be seen that, although the courts are working out the elements, or items, that form a proper basis for valuation, the value to be given these items can never be determined with any degree of certainty. The best that can be said for the

valuation of public utilities under the present method is that the courts have by their guesses as to the correctness of the expert's guesses, made another guess as to the probable value of the utility in question as a basis for the determination of a rate which will assure a fair return on the investment. (Howell, *op. cit.*, p. 44, at p. 43.)

The effect of the indefiniteness of the concept of reproduction cost is that the rate basis is entirely unpredictable. The utility and the regulatory commission are, until the final decision, entirely in the dark, and so is the investor. It is for this reason, among others, that Professor Robert Hale urges the abandonment of the rule of *Smyth* v. *Ames*.

> The time now seems ripe for the Court to overrule *Smyth* v. *Ames* and to repudiate the principles that the rate-making power is subject to limitations pertinent only to the power of eminent domain, and that rates, to be valid, must yield a fair return on "value." It would seem to the present writer desirable if, in a case presenting the issue, the Court should expressly declare (What it held in effect in the *Lindheimer* case) that rates which enable the company to operate successfully and to raise the necessary money (which they do if they yield a fair return on the actual prudent cost), are valid, quite regardless of what return they yield on a "value" in the determination of which reproduction cost plays a part. This does not mean that it would be desirable for the Court to substitute for the rule in *Smyth* v. *Ames*, a requirement that rates must in all cases yield a fair return on actual prudent cost. A state's policy

which fixes rates on that basis cannot be pronounced the only one that is not "arbitrary." The line between those rate regulations that are arbitrary and those that are not, like the line between other valid and invalid exercises of the police power, can better be left to be pricked out as future occasions arise. But counsel could at least advise clients that the validity of particular rates will be determined with reference to facts pertinent to realities. As the decisions now stand, they cannot advise whether the determination will be made with reference to such facts (as in the *Lindheimer* case), or with reference to so-called values in the determination of which no prediction can be made of the weight which the Court will attach to the various elements of actual cost, replacement cost and "going value." They cannot advise whether a company's prosperous condition will be taken as evidence of the adequacy of its rates (as in the *Lindheimer* case), or as evidence of large "going value" whose existence proves the rates to be inadequate (as in the *McCardle* case); nor whether the good physical condition of the company's property will be taken to show that the annual depreciation allowance is excessive and that the rates may accordingly be reduced (as in the *Lindheimer* case), or to show that the "present value" is high and the rates accordingly "confiscatory" (as in *Board of Public Utility Commissioners* v. *New York Telephone Co.*). Certainly *all* of the conflicting decisions of yesterday cannot be the law of today. (Hale, Robert L., *Conflicting Judicial Criteria of Utility Rates—The Need for a Judicial Restatement*, 38 Columbia L. Rev. 959, 976, 977 (1938).)

2. The fallacy of the "competitive price theory"

One of the most seemingly plausible arguments which have been advanced in favor of the use of reproduction cost as a basis for valuation is that it tends to maintain rates such as would be charged under a system of competition. The competitive price theory has been stated by Professor Bonbright as follows:

> According to this theory, the object of public service regulation is to deprive utility companies of the power to charge a monopoly price. Rates should therefore be fixed at a level which they would probably reach if they were regulated, not by the fiat of government, but by the forces of normal competition. But under competitive conditions the prices of services and of commodities tend to equal their cost of reproduction. Therefore, under conditions of monopoly, utility prices should be made to equal the cost of reproducing the service rendered. And by cost of reproducing the service is meant the price which would just be sufficient to induce investors to put up a new plant and to give service similar to that given by the present company. (Bonbright, James C., *Depreciation and Valuation for Rate Control,* 27 Columbia L. Rev. 113, 124–125 (1927).)

From an economic standpoint there are serious flaws in the competitive price theory. It is an attempt to apply the competitive principle to a regulated monopoly by a logical *tour de force.* This is pointed out by the same authority:

> In bringing to a close this discussion of the valuation problem, the point that should

be stressed above all others is the folly of attempting to regulate the prices of public monopolies so that they will conform as closely as possible to the prices that are assumed to prevail under conditions of free competition. Overlooking the fact that the proposed imitation of competition is a very poor one, overlooking the fact that a governmental control of rates designed to yield a stated return on reproduction costs is not even a good caricature of the automatic control of prices that takes place in a dynamic competitive market, we must still recognize that the attempt to carry over into the field of the large-scale monopoly the same price system that is assumed to prevail in the field of the small competitive enterprise, is bound to result in a serious misfit. One reason why it is a misfit is that the competitive price system disregards so ruthlessly the financial needs of the individual producer. To the low-cost producer it yields profits far beyond the current rate of interest on invested capital; to the high-cost producer it brings deficits that spell bankruptcy and ruin. As long as competition is full and free this process, harsh though it be to the unfortunate producer, may serve very well the interests of the consumer. For what matters it to him that any one producer is crippled, so long as he can turn to a more fortunate rival for his necessary services and commodities? Not so under monopoly. Not so with a railway that is alone in serving a community. Why, say the defenders of reproduction cost, should railway security holders be given any greater insurance against the fluctuations of price levels than is given to the holders of securities in an unregulated enterprise? The answer is that when the in-

> vestors in small competitive enterprises fall, they may fall alone, but when the holders of railway securities fall, they force the whole community to become unwilling mourners of their downfall (Bonbright, James C., *Merits of Original Cost and Reproduction Cost;* 41 Harvard L. Rev. 593, 621–622 (1928).)

A variation of the competitive price idea has been advanced in support of the theory of reproduction cost. It has been contended that the utility investor will receive the benefit of a flexible income; his return will thus be relatively constant in terms of purchasing power. Thus, it is said, as prices rise utility values will also rise, increasing the investor's receipts and protecting him from the effects of a general rise in prices. One defect in this reasoning is pointed out in a very recent treatise upon the subject of regulation of utilities:

> * * * The argument that, since reproduction costs fluctuate widely this basis of valuation is more equitable, in that the fluctuations tend to parallel the fluctuations in the general commodity price level, is partly fallacious. Reproduction costs include a large percentage of labor costs, while the percentage of labor costs in the general price level may be much less. Moreover, the general price level includes the prices of many items that are not included in reproduction estimates (Wilson, Herring & Entsler, *Public Utility Regulation,* 1938, p. 127).

The assumption that the income of utility investors will be stabilized under such a rule contains a fundamental error:

> These advocates [of the reproduction cost theory] have recently shown signs of shift-

ing their ground while yielding to attacks upon the illogical "replacement value" theory. They have urged that the investment in the dollars of by-gone years should be translated into a "present investment," that is, the amount of money having the purchasing power of the dollars of yesterday in the commodities of today. The original investment, they suggest, was of a certain purchasing power which, although stated in money at the time of investment, must be restated now in terms of equivalent purchasing power. This claim involves the plausible suggestion that owners of public utility securities should be assured a constant income in purchasing power rather than a constant income in dollars that have a fluctuating purchasing power.

One answer to this new line of argument is that the large amount of investment in public utilities is represented in securities having a fixed return, such as bonds and preferred stock. It is hardly reasonable to ask the Government to provide a fluctuating return for these investors, which they will not be able to obtain, but which will be appropriated solely for the benefit of the common stockholders. Another answer is that it is hardly appropriate for the Government to establish a rule which will favor one class of investors at the expense of the entire community. The new claim that investors should be protected against loss from the reduced purchasing power of the dollar is utterly inconsistent with the old theory of basing rates upon the "value" of the property. (Richberg, Donald R., *The Supreme Court Discusses Value,* 37 Harvard L. Rev., 289, 297–299 (1924).)

This fallacy in the reasoning of the advocates of reproduction cost is pointed out in a report by the Federal Trade Commission to the United States Senate dealing, among other things, with valuation:

> Far transcending any other reply to this argument of the proponents of reproduction cost, however, is that it entirely overlooks the fact that public utilities are almost wholly financed through fixed income-bearing securities, that is, bonds and preferred stocks. The Federal Trade Commission's investigation of the public-utility industry covering 91 representative operating companies engaged in the electric-light and gas business, shows that 70 percent of their capital accounts is represented by outstanding bonds and preferred stocks. What is of further significance is the Commission's disclosure that write-ups of the capital assets of these 91 operating companies approximate 23 percent, substantially all of which was reflected in the equity stocks. In the light of these disclosures, it would be no serious exaggeration to say that the representative public utilities of the country, including railroads to a lesser extent, are more than 90 percent financed through fixed income-bearing securities.
>
> Manifestly, fluctuations in the price level do not affect the man owning a $1,000 bond on which he receives 6 percent interest, so far as his dollar investment is concerned. It is clear, then, that any speculative gain or loss, due to the price level, is reflected solely in the common stocks of utilities. Yet it has not been seriously suggested by proponents of reproduction cost that all

> fixed income-bearing utility securities be recalled, and common stock issued in their place (Federal Trade Commission, *Summary Report to the Senate of the United States,* January 28, 1935. Senate Doc. 92, Pt. 73A, 70th Cong., 1st Sess., p. 155).

The fact is that the use of reproduction cost tends to a result precisely opposite to that which its advocates claim for it. Rates are too high after a period of inflation and too low after a period of deflation. See Willis, Hugh Evander, *Significant Changes in Public Utility Law,* 25 Georgetown L. J. 877, 884 (1937).

3. Delay and expense in determining reproduction cost

The delay and expense involved in the determination of reproduction cost constitute a serious practical obstacle to rate regulation. The time-consuming nature of the inquiry has been referred to by Henry C. Attwill, who for many years had been actively concerned with the practical aspects of rate regulation as chairman of the Massachusetts Department of Public Utilities. The valuation system, he writes,

> * * * slows up regulation and in a great measure makes it ineffective. In practice it takes so much time to decide the question of rates when it is dependent upon a valuation, that, at best, but few cases can be decided by a state authority in a year. Where the authority has a hundred or more companies under its supervision, as is usually the case, it is obvious that there can be but little regulation of their rates. Regulation, to be effective, should be reasonably

prompt. If the company needs relief, it should receive it promptly; otherwise the relief prayed for may not suffice when granted, as during the time of protracted hearings the situation may be going from bad to worse and the loss must be compensated by additional increases in the rates. On the other hand, if the public is entitled to a reduction it should receive it promptly, as earnings, by the decisions of the courts, become the property of the corporation and any excess in rates paid by the consumer can never be recovered by him * * * (*Weaknesses of the Valuation System*, American Academy of Political and Social Sciences, Annals, Vol. 159 (January 1932) p. 96.)

A student of valuation cases writes

> * * * an unreasonable length of time elapses before the courts are able to determine the validity of a prescribed rate. The *Pacific Gas and Electric Company Case*, reversed by the Supreme Court in 1924, and sent back for another valuation proceeding, has been in the courts since 1913. During that time the amount collected by the company above the rate prescribed by the city has been deposited in trust awaiting the outcome of the suit. In many other instances a period of from one to five years elapses after the publishing of a rate schedule before the validity of the rate is determined. Because changing conditions render the previous valuation of little help in determining the question of fair return after such a long time, it is often necessary to have a valuation *de novo*, with its additional expense and delay. (Howell, Ben A., *Recent Development in the Application of the Rule of Smyth* v. *Ames in Valuation Pro-*

ceedings in the Federal Courts, 3 Texas L. Rev. 412, 431 (1935).)

See also Lilienthal, David E., *Regulation of Public Utilities During the Depression,* 46 Harvard L. Rev. 745 (1933); Beutel, Frederick K., *Due Process in Valuation of Local Utilities,* 13 Minn. L. Rev. 409 (1929); Federal Trade Commission, *Summary Report to the Senate of the United States,* January 28, 1935, *op. cit.,* p. 154.

Another example of the delay involved in the determination of reproduction cost is furnished by the history of the litigation in *Lindheimer* v. *Illinois Bell Telephone Company,* 292 U. S. 151:

> * * *—The first order of the Commission in the *Lindheimer* case was issued in 1923, and the hearings preceding that order must have occupied many months. It was not until 1933 that the bill in that case was dismissed. Such a length of time is extraordinary, but few utility valuations, including the length of the commission or court hearings, take less than two or three years. The result is that in a period of depression (even though the utility gives bond to insure refunds to rate-payers) consumers do not receive the benefit of rate reductions when they are most needed, and in a period of rising prices the utilities cannot receive the needed increase in rates when overheads and other costs are constantly increasing. (Note, *Public Utilities—Rate Base—Late Supreme Court Decisions,* 34 Mich. L. Rev. 100, 107, (1935).)

The tremendous consumption of time and money in the determination of reproduction cost accomplishes nothing. For a "fair value" so arrived at controls only as of the time of its determination.

The whole question must be reopened again and fought through to a new determination.

For example, in 1923 the New York Public Service Commission issued an order fixing telephone rates. The litigation which was started by this order was not concluded until 1934. In the course of the litigation 37,000 pages of testimony and 3,000 exhibits were submitted. Three judges, composing a statutory court, spent over six months on a study of the record alone. The results accomplished through the expenditure of this time and effort were thus summarized:

> Thus we have the spectacle of a utility whose rates were the subject of controversy continuously for a period of twelve years. As soon, however, as this cycle of rate litigation had been concluded, another was begun. Again New York telephone rates are up before the public service commission. Thus, the continuous wrangle of a dozen years, at times simultaneously before three tribunals, has settled nothing. This is clearly shown by the very basis of the Supreme Court's decision:
>
> "* * * Appellant, having obtained this relief, is not entitled to prosecute an appeal from the decree in its favor, for the purpose of reviewing the portions of the decree fixing the value of appellant's property as of the years 1924, 1926, and 1928, and the rate of return to be allowed. The matters set forth in these portions of the decree are not to be regarded as *res judicata* in relation to subsequent legislative action by the public service commission in fixing rates for the future or in any judicial proceeding relating to such rates."
>
> Indeed, how could it be otherwise? Even if it was made fairly to public and company,

what good is a 1926 or 1928 reproduction cost valuation in 1934 after prices of materials and labor entering into construction have radically altered?

Herein lies the real significance of this case. While it may have lasted considerably longer than the average utility rate proceeding, it is nevertheless typical of the problems and difficulties involved in all rate cases. It illustrates particularly the fact that the *measure* of return to which a utility is entitled is never clear and definite under the prevailing regulatory system. The reciprocal rights of the utilities and the public remain undefined and variable even after most exhaustive investigation. The more thorough the work, the longer it lasts and therefore the more likely it becomes obsolete before final decision.

This lack of definiteness as to the fundamental factors of rate control is the bane of the existing regulatory process. It is responsible for virtual breakdown of regulation. It creates and perpetuates conflict of interest. It produces trumped-up evidence, protracted hearings, futile appeals, prohibitive expense, and makes systematic regulation as a regular administrative process an impossibility. (Gold, Nathaniel, *An Example of Rate Litigation and Its Significance*, 23 National Municipal Rev. 584, 586–587 (1934).)

Lengthy as valuation proceedings are, they are necessarily expensive. They are expensive to both sides. The utilities are prompted to engage high-priced legal, engineering, and accounting talent, and the commission must follow suit. Furthermore, the utilities pass the expenses incurred by

them on to the rate payers. The rate payers thus bear the financial burden of litigating against their own interest.

> * * * As the cost to the utility in prosecuting or defending a rate case is allowed as an operating expense, this cost is eventually paid by the consumers. Thus, there is an incentive to the utility to protract the proceedings as long as possible; because, win or lose, the cost must be absorbed in the rates, and the effective date of any reduction in rates is usually postponed. (Atwill, Henry C., *Weaknesses of the Valuation System,* American Academy of Political and Social Sciences Annals, Vol. 159 (January 1932) p. 96, 98.)

The Federal Trade Commission has likewise called attention to the injustice of the burden placed upon the rate payers:

> Now, the significance of rate litigation, a particularly expensive type of legal procedure because of the expert engineering and accounting testimony upon which it depends, is that the cost of maintaining it in behalf of the companies constitutes an allowable expense of operation and must, therefore, be a determinant in the fixing of any rate estimated to allow a fair return to the utility. Thus, the expense is saddled on the rate-paying public. Furthermore, the cost of maintaining commissions and courts before whom rate cases are tried is a direct charge upon the State's tax resources, again a burden on the public. Likewise, special counsel, where used in behalf of the State or commission, and the fees of any independent experts they may feel called upon to employ, to say nothing of the not inconsiderable item,

in protracted rate cases, of stenography, printing, and miscellaneous expense are all out of the public pocketbook. What the aggregate of such sums amounts to in any one year has probably never been computed; that it is enormous goes without saying. It is not unsafe to surmise, therefore, that whatever influence lawyers, engineers, and accountants with public-utility connections can bring to bear to preserve a system representing such a source of income of them, will continue to be brought. This is particularly true while, as at present, utility holding companies supply so many of such services and are dependent upon their continuance for much of the holding company's own revenue. (*Summary Report to the Senate of the United States*, January 28, 1935, *op. cit.*, p. 54, at p. 157.)

See also, Note, *Public Utilities—Rate Base—Late Supreme Court Decisions*, 34 Mich. L. Rev. 100, 107 (1935):

* * * Professor Riggs, an engineer with wide experience in valuation cases, states:

"The subject of revaluation of large properties has become a matter of grave concern to officers charged with the management of utilities. Valuation work accurately and carefully done, in sufficient detail to satisfy the requirements of attorneys conducting rate or other cases involving valuation, is costly and time-consuming. * * * To have expended from $50,000 to $500,000 for valuation of utility property within four or five years, and then to face a new valuation to meet the needs of a new case is a serious matter in the case of any company." This expense is passed on to the rate-pay-

ers in the form of an increased allowance for overheads, and an equal expense to the Commission is likewise passed on to the public in the form of increased appropriations for valuation work—or through the failure to hold rate hearings.

The case of *Indianapolis Water Company* v. *McCardle*, 272 U. S. 400, provides a striking illustration of the expensiveness and delay of the proceedings. The facts of the case have been summarized as follows:

> The company was comparatively small. The court, dispensing with the services of a master, heard the evidence itself. The commission, the lower court, and the majority of the Supreme Court, were agreed that the theory of reproduction was to be taken as the determining factor of value, and that 7 percent was a reasonable rate of return on the value so determined. Within seven months of the beginning of these proceedings before the commission, the company and commission, after a complete investigation by the commission's engineers, had agreed upon a valuation of the entire property involved, for bond issue purposes. This result supported in detail the valuation for rate making purposes later made by the commission and questioned in this suit. All these facts tended to simplify the case. There was no necessity of projecting return or calculating fictitious costs of production. The only point at issue was the value of the property on the reproduction theory. Thus we have here an example of a valuation case reduced to its simplest possible element, the determination of the pure fact of value by agreed methods (pp. 424–425).

* * * * *

An examination of the record and opinions discloses that over forty different estimates of the total value of the property were offered in evidence before the commission and the courts. These estimates ranged from $8,612,399, the actual cost of the property shown by the company's books, to $25,404,026, the value claimed by Mr. Hagenah, an expert witness for the company (p. 425).

* * * * *

The proceedings in this, the simplest of cases as rate fixing cases go, started on June 8, 1923, and three years and five months later on, November 22, 1926, the Supreme Court finally reversed the commission. The investigation to compile the evidence and the hearing of the testimony in the various tribunals consumed over a year's effort by a combined staff of experts employed by the commission and the company. The briefs and record, in greatly abbreviated form, in the Supreme Court alone had reached a total of about 700 pages which fill a bound volume approximately three inches thick, when the court, to avoid further delay, fixed the valuation (pp. 425–426).

* * * * *

Now suppose the commission on the day the Supreme Court handed down that decision had fixed rates calculated to yield 7 percent on $19,000,000, would the rate stand without a redetermination of the value of the plant? The plain answer on the theory of the case must be, No! The valuation is fixed as of January 1924. The rate necessarily must be fixed as of November 1926. The company if it desired, could question the rates immediately, and the inquiry would have to take place in 1927 (pp. 426–427).

* * * * *

> The only "fact" of value conclusively established is "spot" value as of 1924; but the spot has moved while the judicial process ground on. The system approved in this case demands a new determination of value, so the commission, courts, and experts must get together once more and construct a new theoretical plant on the "spot" prices of 1927. The very magnitude of the task will again cause the result to be useless. Thus, on the theory of this case, no rate can ever be set which will bind the company (p. 427). (Beutel, *Due Process in Valuation of Local Utilities*, 13 Minn. L. Rev. 409 (1929).)

4. The fictitious nature of reproduction cost

The phrase "reproduction cost" covers a concept which has become extremely involved. It would be difficult to conceive of anything farther removed from reality than the idea of reproduction cost as it is at present applied by the courts. A consideration of the manner in which utilities attempt to arrive at the reproduction cost of their plant reveals that there is virtually no relationship between the so-called reproduction cost of existing plant and the price at which a service equally satisfactory could be secured. The completely fictional character of the so-called "value" of property as determined upon the reproduction-cost theory becomes apparent when it is observed that there are possible variations of as much as 100 percent between the estimate of engineers testifying on behalf of a utility and that of a commission's experts. Richberg, Donald R., *A Permanent Basis for Rate Regulation*, 31 Yale L. J. 263, 269 (1922).

Carl I. Wheat describes the unreality of the reproduction-cost theory vividly:

> Indeed, when it comes to the actual process of arriving at such a figure for a public utility system, as this "reproduction cost" process has been built up in recent rate cases, those who prefer to keep their feet on sound ground must part company with the so-called "experts." In contrast to the realistic approach to the problem, we discover that under this second approach there has been erected a great structure of imaginary and imaginative potential and hypothetical "costs," totally unrelated to reality. And the argument is made that this is what the Supreme Court really meant by its use of the term "present cost." Here, indeed, we discover the *ignis fatuus* of "valuation."
>
> It is on this second premise that the "experts" assert the necessity for including the various unreal elements above mentioned, *i. e.*, the nonexistence of the existing plant, the coming to town of a promoter, his speeches to the local clubs offering to build a plant, the excitement and delight of a receptive populace, the preparation of blueprints, the obtaining of new franchises under social, legal, and political conditions not effective when the plant was originally built, the cutting and replacing of pavement not historically cut or replaced, the cost of meeting increased traffic and city growth, and a myriad of like "difficulty factors" that were not present when the plant under consideration was actually constructed, together with divers other hypothetical costs which an actual physical "reproduction" of the property might conceivably entail. Wheat, Carl I., *The Present as Compared*

With the Original Cost of Construction, 20 Pub. Util. Fort. pp. 6–8 (1937).

In the article referred to above Wheat cites a striking example of the unreality of the reproduction cost approach:

> In the Los Angeles Case the book cost of the company's properties totaled $169,000,000; the cost to "reproduce" the properties at the time of the inquiry was claimed to be $182,800,000; and the claim of "fair value" after taking into consideration admitted accrued depreciation, was $175,000,000. We are here concerned solely with the basis of the company's assertion of what it would cost to "reproduce" the properties.
>
> That figure was based upon an inventory to which certain derived "unit costs" were applied. Cross-examination of the company's witnesses disclosed that this "appraisal" included $3,171,400 to represent *the cost of cutting and replacing paving over conduits in instances where no such costs were historically incurred,* though the Supreme Court had but recently declared that "the cost in imaginary conditions of cutting and restoring pavements was not an increment of value." It further appeared that the total included $1,033,000 to represent *telephone station installations and associated drop wires which had actually been abandoned at the time of the appraisal.*
>
> Moreover, it was brought out that no less than $1,623,000 was included to represent *"left-in disconnects," i. e.,* telephone disconnected but left by the company, for its own convenience, on the former subscribers' premises. (Picture the imaginary promoter rushing hither and yon over the new

> system feverishly "reproducing" this large amount of already disconnected and idle equipment!) In addition, the sum of $405,500 was included to represent imaginary *organization and franchise costs in excess of those actually incurred in the development of the system,* an item that had recently been specifically disapproved by the Supreme Court. (*Op. cit.* at p. 12.)

The Los Angeles Gas Company, furthermore, claimed a sum of $20,610 representing a glorious flight of fancy—taxes during construction on interest during construction (*op. cit.*, pp. 12–14). The writer describes the method by which the utility sought to ascertain the reproduction value of automobiles:

> Curiously enough, the urge for consistency in presenting "reproduction cost" estimates in the Los Angeles Case led the company's experts into a peculiar *cul-de-sac* when it came to automobiles. Notwithstanding the fact that the southern California used-automobile market is the largest in the United States, and that actual used-car prices are published, are fully standardized, and are readily ascertainable, the company's witnesses decided to "reproduce" its automobiles. To this end they went through the following highly illuminating process:
>
> "(1) They obtained from automobiles piece-part catalogues the prices of some thirty separate parts (representing, said they, some 60 per cent of the total vehicle), (a) for the year each make and model of vehicle was purchased, and (b) for December 31, 1934, the date as of which the 'valuation' was being made;

"(2) They ascertained the ratio which the sum of these piece-part prices for the year of purchase bore to the sum for December 31, 1934;

"(3) They applied this ratio to the total cost of vehicles of each particular type and age, as shown on the books, and

"(4) They labeled the resulting figure 'reproduction cost new' of automobiles."

In such fashion did they obtain the "cost new" of a 1929 Ford in 1934! If such a process bears any relation to "value"—under *any* definition of that term—it is difficult to perceive it. Yet this is but one example of the lengths to which many otherwise sane men have gone when attempting to build up "reproduction cost" figures in rate cases under the second theory of its nature. (*Op. cit.* at p. 14, footnote 18.)

It goes without saying that if a plant were actually to be reproduced it would be designed in a way to take advantage of possible operating efficiencies. Thus, a plant which would produce at a capacity equivalent to that of existing facilities would normally be of a different design and higher operating efficiency. In the normal course of engineering development economies would be worked out and passed on to the consumer in the form of a reduced rate, resulting from a reduction in the valuation. The purely theoretical character of the concept of reproduction cost takes no account of these operating efficiencies:

* * * In exchange-value economics the real value of a plant is not determined by the cost of reproducing the identical plant but by the cost of producing the commodity in a new plant having the most modern

equipment required to produce the article. No one would be willing to invest in an obsolete plant if a new one could be built to be operated at much lower operating expenses per unit of product if such a plant could be built for the same cost as the obsolete one. It is the cost of building a modern plant of similar capacity that determines the value of a plant in an unregulated competitive industry, and not the cost of reproduction of a similar plant. Hence, reproduction cost does not cause the owners of a regulated enterprise to fare the same as the investors in unregulated competitive enterprises.

There is, furthermore, a limitation to the concept that the cost of producing the commodity in a new plant regulates the value of an old plant, since, because of technological developments, the value of such a plant would scarcely, if ever, exceed the cost of reproduction and might be considerably less. Reproduction cost, therefore, is a measure of maximum value at best. Wilson, Herring, and Eustler, *op. cit.*, p. 57, at p. 126.

That no public utility property ever is or ever has been actually thus physically "reproduced" does not deter these advocates. They merely assert that they have been told to find the cost of *reproducing* the plant under existing conditions, and "here it is." Admittedly, if this second theory of the reason for developing the item of "present cost" in rate cases were ever to be consciously and definitely adopted by the courts, it would be essential thus to estimate a "construction period," to guess at the cost of cutting and replacing new paving, and to imagine the expense that might be incurred in meeting the many traffic and other community fac-

tors that have developed since the actual construction, with resultant increased potential costs over and above those which have been met in the historical development of the property under consideration. The adoption by many utilities of this second alleged reason for the development of "reproduction cost" has apparently resulted almost wholly from the hope that by some such reasoning they could thus raise this item farther and farther toward the stratosphere (*Op. cit.* at pp. 6–8).

Similarly Attwill writes:

> When we know that values are required by courts to be placed upon the property of a corporation which no one in the world would pay to acquire, except for the monopoly the utility enjoys through special privileges obtained from the public, and values which usually exceed the total of the market value of the outstanding stock plus its liabilities, we know there is something wrong in this system of valuation. Mr. Justice Stone has aptly described it as a "synthetic" value. Synthetic products are seldom as good as the real thing. (*Op. cit.*, p. 23, at p. 99.)

Furthermore, the new plant construction might well produce at a lower unit cost by reason of its operating efficiencies. Such a reduction in the operating cost would be passed on to the consumer, if the plant in fact were reproduced.

> Even if a new plant of equal capacity were to cost more to construct, it might produce at unit costs so much less than the old plant that the additional cost of construction would be an excellent investment. In

such a case it would be unfair to require the consumer to pay rates that would yield enough to pay the high operating expenses of the old plant and produce a return equal to that which would be a fair return upon the greater cost of an up-to-date plant. Yet the courts have held in numerous valuation cases that the plant, the cost of reproduction of which is to be estimated, is a plant identical with that in existence and have declared that the cost of reproduction of the plant must be considered in valuation for rate-making purposes. (Wilson, Herring, and Eustler, *Public Utility Regulation,* 1938, p. 126.)

From the standpoint of the public, there is a serious consequence of the reproduction cost theory. It discourages the introduction of improvements in the technology of the utility. It is in the words of Attwill, "an incentive to inefficiency."

> The system makes no provision for depreciation by reason of inadequacy or obsolescence due to the change in the art. Under this rule, what incentive is there for the company, once it has absorbed the lighting and power business in its area, to install up-to-date equipment? If it can obtain as great a return on the old as it can on the new equipment, there is little incentive, so far as the profits of the business are concerned, to install the new. (*Op. cit.*, p. 23, at p. 99.)

As stated by another:

> It [reproduction cost], encourages the companies in using antiquated machinery and obsolete equipment because of the increase

> of rates which will result from the practice of including such machinery in the valuation at prices many times greater than its original cost or present value as productive equipment. Thus, in a recent case an obsolete pumping plant that cost less than two hundred thousand and could have been replaced with modern machinery for less than three hundred thousand, was allowed a "reproduction" value of over one million dollars. (Beutel, *op. cit.*, p. 63, at p. 433.)

There is a further factor tending to make the reproduction cost entirely unlike the expense that would be incurred if the utility were actually to be reproduced. The determination of reproduction cost involves the assumption that current prices can be accurately ascertained. As a matter of fact this is very far from true.

> * * * As prices go upward or downward, either as to labor or materials, or as the technological processes of construction or manufacture of equipment change, the amount of the reproduction cost is immediately affected. But these are all unweighted factors, which are not accurately recorded, constantly vary, and hence cannot be determined without wide differences of opinion as to their quantitative significance. Consequently, every attempt to readjust the sum is accompanied by extended litigation, cumbersome proceedings, bulky records, and tremendous expense. (Bauer, *op. cit.*, p. 42, at p. 415.)

There are indeed several ways in which the ascertainment of current prices may be entirely false. There is not only the possibility of error, which attends the determination of most economic facts.

In addition there is a serious danger of a fictitious price level.

> The use of "spot prices" on equipment purchased from the Western Electric Company (though the reflection of "precipitate" price changes had been frowned upon in the West Case) also enabled the utility to take advantage of a sudden recent and rather large price increase by that company, and to claim some $7,000,000 more than would have resulted from the adoption of a 5-year average pricing period (that being the "construction period" actually adopted by the company in its "reproduction cost" estimate). And this in the face of generally declining price levels in respect to almost all other commodities over that period. The fact is that such Western Electric price increases had practically no direct effect on the capital structure of the plant under consideration, since the construction program of this utility had been neglible in amount since this price increase, and in fact had been negligible in amount for some time prior thereto. Thus, by a mere scratch of the pen, the Western Electric Company (another subsidiary of the defendant utility's parent corporation) had created a basis for claims of increased "reproduction costs" totaling millions of dollars in this single case. (Wheat., *op. cit.*, p. 65, at pp. 6–8.)

The general counsel of the Illinois Commerce Commission likewise draws attention to the possibilities of price rigging:

> But inasmuch as the utility company is usually a prospective as well as a former customer of the manufacturer in such a case,

it is a strain on credulity to assume that the estimated price has much probative force; yet no one is in a better position to make an estimate.

The same difficulty exists, though usually in lesser degree, with quotations of prices even where the items are not obsolete, particularly where an item is a specialty of one manufacturer. An outstanding example is in the case of telephone apparatus of Bell Telephone companies. This is nearly all made by the Western Electric Company, an affiliate; and the price policy of that company has been the reverse of that necessarily followed by competitive companies. When demand falls off, as has happened during the depression, the Western Electric Company raises prices; when demand and production increase, the prices tend to fall. As a reproduction cost appraisal involves the pricing of a vastly greater amount of apparatus than is actually being produced for the Company in question, current Western Electric prices have little to do with such a situation. A somewhat similar condition seems to exist in the case of electrical apparatus made by the General Electric and other large manufacturers. Prices of much of such equipment have gone up during the depression, and the Federal Trade Commission has attacked price-fixing in some such instances. (Booth Harry R., *Prudent Investment, Fair Value and Public Utility Regulation,* 1 National Lawyers Guild Q. 229, 240 (1938).)

There are additional difficulties in the way of the determination of current price levels:

* * * The difficulty of securing adequate current price data at a time when

purchases of construction materials are negligible or nonexistent will tend to the use of older data, and thus obscure to a considerable measure the actual reduction in material costs. Reliable labor costs reflecting actual practice are difficult to obtain. (Lilienthal, David E., *Regulation of Public Utilities During the Depression,* 46 Harv. L. Rev. 745, 754 (1933).)

5. "Reproduction cost" ignores the cost of reproducing a service

Theoretically reproduction cost should properly be the cost of reproducing a service, not the cost of building an identical plant.

> * * * First, the only possible argument in favor of cost of reproduction springs from the analogous use of cost of reproduction in private competitive business. * * * But the cost of reproduction so far as utilized in establishing prices in private business is not the cost of reproducing the identical property but the cost of reproducing an equally serviceable property. Or, let us say, it is the cost of reproducing the article or service, or an equally useful article or service, and never the cost of reproducing a particular plant. In truth, invention and improvement work changes in all industrial operations so rapidly that it is difficult to find any plant a few years old which would be reproduced by competent engineers in the same form today. Therefore, to utilize the idea of cost of reproduction intelligently is not to utilize the cost of reproduction of any particular property but of a service or of an equally useful service. (Richberg, Donald R., *A*

Permanent Basis for Rate Regulation, 31 Yale L. J. 263, 277 (1922).)

While an accurate application of the theory calls for ascertainment of the cost of reproducing the service, such an ascertainment is in practice impossible:

> * * * It must be apparent that such a basis for rate making would open up a new field for speculative estimating, to the increased profit of engineers and lawyers and to the increased confusion of the courts and commissions and would bring increasing instability to all public utility operations. (*Ibid.*)

The impossibility of applying reproduction cost as it should in theory be applied was observed by Robert H. Whitten as early as 1914:

> * * * The reproduction of the service involves not only the determination of the cost of the most efficient substitute plant, but the determination of the present cost of reproducing the business, the proper allowance under present conditions for interest and profit, and the operating costs for the substitute plant. In most cases it is exceedingly difficult and expensive to determine the design of an equally efficient substitute plant. In the case of a railroad, for example, the cost of determining a substitute location and of estimating the operating costs thereon would be so great as to render it entirely impractical as a factor in rate regulation. It would require a careful survey of various available locations, and estimates of construction and operating costs. The engineering costs of such survey and estimates would be enormous.

> The cost of reproduction in practice, therefore, instead of meaning the cost of a substitute plant of the most modern approved design, capable of performing the same service as the existing plant, has come to mean the cost of a substantially identical reproduction of the existing plant. This is the usual method. It involves, however, a partial abandonment of the reproduction of the service theory, and a somewhat imperfect recognition of the fact that cost of production is necessarily related to the past as well as to the present and future. (Whitten, Robert H., *Fair Value For Rate Purposes,* 27 Harvard L. Rev. 419, 427 (1914).)

6. Unearned increment

When an investor holds property over a period of years, he may become the beneficiary of an unearned increment. It has been contended by some that a reproduction-value rate base enables the investor to realize an appreciation of this kind.

This argument has been advanced by advocates of the use of reproduction cost as the basis for valuations. But, like the "competitive price theory," the claim is specious. The fallacy has been exposed as follows:

> The most common argument against the use of the original-cost method of valuing public utility properties, aside from the difficulties alleged to be encountered in securing records of such costs, is that appreciations in value of property (if such exist) are denied to the owners thereof. The reproductionists; however, do not point to any rule of common equity which entitles them first to earn an adequate return on their investments and then to participate in the

> profits which accrue to appreciation; but they rely on certain judicial passages, which in themselves are sound, although subject to linguistic abuses when applied unadvisedly to valuations that are made bases for rate schedules. (McCann, W. R., American Society of Civil Engineers, *op. cit.*, p. 1618.)

The attempt to evaluate items of unearned increment enhances the speculative character of determinations of value:

> * * * Under the principles of valuation as hitherto established and administered by courts and commissions,[1] "fair value" has become a means of justifying and legalizing almost every type of unearned increment, tangible and intangible, which accrues to unregulated monopoly. By the inclusion of such costless values as going value, water right values, easement values, and by the failure to make anything like complete deductions for accrued depreciation and obsolescence, companies are able to establish "values for rate-making purposes" so large that even the most prosperous and profitable enterprises make the false appearance of earning only a very limited rate of return. (Commission on Revision of Public Service Commissions Law, New York, Minority Report (1930), p. 251.)[2]

Furthermore, the increase in value due to unearned appreciation is altogether a creation of the community. It is manifestly unjust to require the rate-paying public to bear an enhanced burden by

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[1] Italics appearing in original have been omitted.

[2] The minority members were Frank P. Walsh, James C. Bonbright, and David C. Adie.

reason of an increment which it has created. Richberg, Donald R., *A Permanent Basis for Rate Regulation,* 31 Yale L. J. 263 (1922).

This is but one way in which the use of a reproduction cost basis enables a utility to increase the charges to the community by reason of values contributed primarily by the community. Current practice with regard to depreciation reserves provides another device for accomplishing the same result:

> * * * It [the reproduction cost method] includes the depreciation reserve as a basis of the return, because as a practical matter it is invested in the plant. This naturally arouses hostility upon the part of the consumer. He is asked to build up an insurance fund to protect the integrity of the stockholders' investment, and then is required to pay a return upon that insurance fund in rates. This necessarily arrays the stockholders and the consumers in hostile camps, with the result that the consumer vigorously assails the provisions for depreciation. This causes vigorous assaults to be made upon the allowances for depreciation in rate controversies, with the result that public authorities are likely to allow too little for depreciation. This must be made up by larger expenditures for maintenance, or the capital of the company will eventually become impaired * * *. Attwill, *op. cit.,* p. 23, at p. 98.)

7. *Effect of competing theories on utility financing*

There is a sharp conflict of opinion as to the respective effects of the rival valuation theories upon

the market for utility securities. Passing, for the moment, the merits of the controversy, it is evident that the prevailing uncertainty as to the proper method of rate determination must have an adverse effect. This was pointed out by Robert H. Whitten:

> Investors in putting their money into public utility enterprises are entitled to know whether, in case the utility is appropriately located and normally successful, it will be permitted to earn a return on the actual and necessary investment, or upon the cost of reproduction, or upon the market or exchange value of the property, or upon a combination of these or other factors. Any arrangement might conceivably be fair to the company and fair to the public provided it were known in advance, so that reciprocal relations between risks involved and returns secured might be established, and proper methods of accounting for depreciation and appreciation instituted. For the future at least it is clearly essential that some one standard should be adopted as the normal and controlling standard in determining fair value. As to the past, the situation, while more complicated, still points to the desirability of definitely choosing some standard. (Whitten, Robert H., *Fair Value For Rate Purposes,* 27 Harv. L. Rev. 419, 420.)

The argument in favor of reproduction cost runs largely in terms of realization of unearned increment and stability of the investor's real income. These questions have been discussed above. For present purposes it will be sufficient to quote

the following passage from the Federal Trade Commission's report:

> Nevertheless it is said that reproduction cost (which necessarily reflects price changes) is essential to attract capital in a competitive market at minimum rates of interest, since it is necessary to permit utility investors to take advantage of unearned increment in land and other values, in order to induce capital to flow into a regulated enterprise rather than into competitive industries. The argument is that as long as other fields of investment are permitted to hold out the lure of possible unearned increment, utilities must be free to hold out the same lure. Bonbright has pointed out, however, that investors overwhelmingly prefer security of income to opportunity for speculative gains coupled with risk of corresponding loss, as abundantly indicated by the preference of investors for bonds and other fixed interest-bearing securities rather than for common stocks. It is further indicated by the ability of the United States Government to market its bonds at rates considerably below the prevailing rates of interest without the inducement of any speculative gain. Federal Trade Commission, Summary Report to the Senate of the United States, January 28, 1935, *op. cit.*, p. 155.

Similarly,

> It is a fair assumption that, in general, investors in establishing public utilities have looked to a fair return on their actual investment to compensate them for their outlay, and have not taken seriously into account

> any appreciation or depreciation in the value of land or in the price of labor and materials entering into the reproduction cost of structures and equipment. They have necessarily assumed that they would be able and would be permitted to receive for their service an amount equal to their actual cost of production, *i. e.*, operating expenses, depreciation, and interest and profits on their actual capital outlay. (Whitten, *op. cit.*, p. 425.)

To the same effect see Bonbright, James C., *Merits of Original Cost and Reproduction Cost,* 41 Harvard L. Rev. 593 (1928); Hale, *op. cit.* p. 971.

A fluctuating rate of return may, indeed, attract a certain class of capital. But capital so attracted is of dubious usefulness. It represents speculative purchases of equities, a form of "investment" that the utilities and the public might well do without.

> The normal actual capital cost as a basis for rate determination, moreover, has a distinct advantage from the standpoint of public policy. It is desirable that rate schedules should have stability and should not fluctuate with the price of iron pipe or copper wire or with real-estate activity or reactions. A utility is not established for the purpose of speculating in copper wire or iron pipe or land. It must, however, in furnishing its service invest its money permanently in these things. The utility should not be expected to assume the risks of fluctuations in the price of the land and materials it uses (Whitten, *op. cit.* p. 79, at p. 426).

Indeed, the speculative character of reproduction value rates is a source of serious dangers to the utilities themselves. Writing in 1921, a commentator

called attention to the probable effects of a prolonged decline in prices:

> * * * It should be pointed out that we are at present quite obviously entering upon a period of declining prices and that in determining a rate base any use of figures representing the cost to reproduce the identical property will deprive public utilities in the near future of any return upon millions of dollars of actual investments which have been made in the last few years in properties which may be reproduced in the years soon to come for less than the amount of the investments which they represent. In such a time it will seem as unfair to the investor that his investment should be scaled down and that the return on his capital should be diminished because of declining price levels as it has seemed unfair to the consumer that the investor's capital should be inflated and his return increased because of rising price levels. (Richberg, Donald R., *A Permanent Basis for Rate Regulation,* 31 Yale L. J. 263 277–278 (1921).)

Likewise, Bauer comments:

> The second general objection to reproduction cost is its failure to provide for proper standards of financial stability in the industries affected by regulation. It would promote speculation during one period and produce financial disintegration during another. It would, in turn, attract unnecessary capital and then retard the desirable flow.
>
> The fact is usually overlooked that by far the greater proportion of the actual investment in public utility properties has been made through bond and preferred stock. A reasonable estimate is that at least

> 75% of the cash capital was furnished by these securities, and only 25% or less by common stock. In many instances the proportion of common-stock investment is even less, and there are important cases where all the money put into the property is represented by limited return securities. Because of such normal financial structure, with the large percentage of fixed-return capital, any change in the return on the investment has a cumulative effect upon the common stock. (*Op. cit.* p. 42, at p. 419.)

A fluctuating rate of return deprives conservative investors of stability, on the one hand; and it tends to imperil the financial soundness of the utility on the other hand. But the evil potentialities of the variable rate base are by no means exhausted. Much of the financial manipulation which discredits the management of utilities is directly traceable to the use of the reproduction cost base. "Undoubtedly, the stakes are high for those who control utilities through very narrow equities, offering great opportunity for speculative gain." Frankfurter, *op cit.*, p. 46, at p. 106.

> The doctrine of fanciful valuation has greatly encouraged recent tendencies in financial organization. In turn, the elaborate and mysterious refinements of intercorporate relations have powerfully sustained the efforts by which lawyers and engineers have built up schemes for inflated values. The search for fictitious value—at best a game of blindman's buff—is thus greatly complicated by the intricacies of elaborate corporate arrangements within utility enter-

prises. Not only is there the excitement of a game fascinating to technicians in law and engineering, but in applying the prevalent judicial doctrines of utility valuation by manipulating intercorporate relations, there are the cruder but more solid temptations of buttressing unreasonable rates by law and securing huge profits through speculative utility holdings. (Frankfurter, *op. cit.* p. 46, at pp. 107–108.)

8. Practical experience in valuation

The regulatory commissions have hitherto been subjected to a judicially imposed requirement of considering reproduction cost. But there has in fact been a body of experience developed in the application of valuations determined without reference to reproduction cost. The public utility commissions of Massachusetts and California have, over a period of years, made use of a valuation principle which is independent of the use of reproduction cost:

> We are indeed fortunate to have the benefit of the actual experience of at least two states with the historical cost doctrine. Both the Massachusetts and California Commissions have, notwithstanding the absence of judicial support, had the courage to follow this principle through many years of regulation. More than any other state Massachusetts has been able to avoid appeal to the courts, while the California Commission's rate decisions have been sustained with few exceptions in both the state and federal courts. (Rooks, Irvin, & Booth, Harry R., *Rate Regulation of Public Utilities,* 13 Ore. L. Rev. 122, 125 (1934).)

The Massachusetts Public Utility Commission has applied a rate basis resting primarily upon prudent investment, with outstanding success.

> Our concern in Massachusetts now is that we may be forced to abandon a system of regulation that, on the whole, has worked well for nearly half a century. Financiers and economists outside of our State have asserted, with some heat and vigor, that our system is unsound economically and cannot work successfully; that it is unjust to the corporation and its stockholders, and that as capital is timid, it will not seek investment in public utilities in Massachusetts. Representatives of some of our own electric companies have sung the same song. The answer to this is that the system has been in operation for nearly fifty years; that in all that time, resort to the Federal courts has been sought by electric companies in Massachusetts but twice, both cases being abandoned; that all of the electric companies in our State are in sound financial condition, and, so far as I am aware, none have difficulty in securing the necessary capital for their development; and that decisions on rate questions are fairly prompt, and hearings and investigations are rarely protracted. We believe that the good faith of Massachusetts can be relied upon by those who invest their capital in public service enterprises, as it can be relied upon by those who lend the State their money. (Atwill, *op. cit.*, p. 23, at p. 97.)

But if the prudent investment basis has proved feasible in practice the same cannot be said of reproduction cost. In spite of the inordinate expense and difficulty of determining "fair value"

under this method the value so determined is frequently not a practicable measure of the return that a utility can in fact receive. Thus, it is found that utilities do not charge a return based upon reproduction cost:

> Chairman Cortelyou of the Consolidated Gas System, Vice President Nickerson in charge of its finances and accounts, and President Sloan of the New York Edison Company and the other electrical properties, all testified that the rates in effect were not yielding the return on the present value of the properties in which they were entitled under Federal Court decisions. In most cases they testified, the rates were not providing a fair rate of return even on actual investment. They said, however, that these rates were good business, i. e., dictated by "good business judgment," that they were in general adequate to enable the companies to obtain all the new capital required to properly service the communities, and they admitted further that the companies were able to pay good dividends on their common stock.
>
> Such testimony exposes the absurdity of the whole valuation claim which has gone so far to wreck public utility regulation. The companies are expending great sums of money and are making extreme efforts to secure rulings from the Courts to the effect that rates dictated by good business judgment and adequate to secure new capital are confiscatory under the 14th amendment to the federal constitution. Unquestionably such admissions show that the valuations of these properties could safely be reduced not only below the elaborate figures for present value built up by the engineering and ac-

> counting forces of the corporation but also below the actual investment figures on the books of the corporations. (*Commission on Revision of Public Service Commissions Law,* Minority Report (1930) 271.)

A serious consequence of prevailing practice in the application of reproduction cost is its effect upon the expert administration of utility law. In practice the decision as to the rate is taken out of the hands of the Commission and rests with the last judge or master who passes on the case:

> * * * In practical operation, such a system substitutes the judgment of a master appointed by a court for that of the duly sworn body created by the state for that particular purpose. (Attwill, *op. cit.,* p. 23, at p. 99.)

Another practical consequence of the use of reproduction cost as a factor in determining the rate basis is sometimes referred to as "social friction." By this is meant the constantly increasing ill-will which is fostered by prolonged and bitter controversies over the determination value.

> The customer on the other hand is subject to all sorts of annoyances; the constant changes of rates by injunctions, the retroactive effect of Supreme Court decisions coming years after the litigation starts, uncertain business conditions following the unforeseeable variations in rates, and the loss of large sums of money due to the impossibility of refunding overcharges on impounded rates subsequently declared illegal.
>
> * * * * *
>
> But, though the consumer is heavily burdened, the public at large is the greatest

sufferer from the present "process" of valuation. The unnecessary social friction due to the overloading of the legal machinery, the diverting of the attention of courts from other important matters of law to attend to purely speculative questions of fact, the lost effort of commissions due to constant delays and unnecessary reversals, all these are minor matters compared with the financial cost entailed in the proper conduct of a valuation case. Expert witnesses and capable counsel are expensive luxuries. One eastern public service corporation reports that the engineering cost alone of evaluating a two hundred and thirty million dollar plant was over a million and three quarters dollars. Add to this the fees of expert witnesses and a competent legal staff and it becomes apparent that no private citizen or civic organization can, and no state governmental agency supported by taxes will, attempt to compete with the corporations in gathering and presenting evidence before the master of the court. (Beutel, *op. cit.*, p. 63, at pp. 432–433.)

* * * * * *

9. Miscellaneous judicial and administrative opinion concerning the merits of the reproduction cost versus prudent investment controversy

In addition to the many authorities cited and quoted in the foregoing portions of this appendix, there are a number of commissions which have taken a very positive stand with respect to the controversy. Likewise, there are a number of judicial opinions which have pointed out the evils of the present system and protested against its continuation. An examination of these authorities

will serve to clarify the position of the Government in this brief:

Perhaps the best exposition of the prevailing attitude of those who have been in direct contact with this problem is contained in the Minority Report of the Commission on Revision of Public Service Commissions Law of New York. The report states:

> In our opinion the greatest single weakness of the existing system of public utility regulation—and this applies not merely to New York State but to the country as a whole—lies in the hopeless difficulties inherent in the use of a physical valuation of property as the basis of rate control. Unless and until this fatal defect in regulating theory has been overcome, any attempt to revise the Public Service Law must fail to reach the root of the trouble. To a very large degree the other weaknesses which have been disclosed in the New York regulatory system, such as the understaffing of the Commission, the tendency of the Commission to become a purely judicial as distinct from a regulating body, and even the evils resulting from the unrestricted financial operations of holding companies are a repercussion from this more fundamental obstacle to effective control. We believe that we share this view with the great majority of impartial students of the problem and that the existing system would find almost no defenders were it not for the support which it derives from those utility companies which believe that its maintenance is in their pecuniary self-interest. (Commission on Revision of Public Service Commis-

sions Law, New York, Minority Report (1930) p. 334.)

It has been the considered judgment of the great majority of the regulatory commissions that the use of reproduction cost is not a proper factor in the determination of a valuation. Indeed it is apparent that except insofar as the courts have compelled them to do otherwise, the commissions have tended to decline to apply the reproduction cost rule. In order to bring out the extent to which the commissions have adopted this position, we have conducted an extensive examination of the rulings of the commissions. Below are listed a selection of decisions in which it has been held that reproduction cost should not be a controlling factor:

Danbury v. Danbury & Bethel Gas & Electric Light Co., P. U. R. 1921D, 193, 206.

Re Potomac Edison Co., P. U. R. 1933B, 6.

Grafton County Electric Light & Power Co., P. U. R. 1916E, 879, 885–888.

Northampton Gas Petition, P. U. R. 1915A, 618, 626.

Bay State Rate Case, P. U. R. 1916F, 221, 223.

Middlesex & Boston Rate Case, 2nd Ann. Rep., Massachusetts, Public Service Commission, Vol. I, pp. 105–112 (1914).

Public Service Commission v. Washington Power, Light & Water Co., 7 Ann. Report, Public Service Commission of Washington, 130 (1917).

Re York County Water Co., P. U. R. 1921A, 439.

Iroquois Natural Gas Co., P. U. R. 1919D, 76.

In re Tarkio Electric & Water Co., 12 Mo. P. S. C. R. 260 (1922).
Re Northern States Power Co., 15 P. U. R. (N. S.) 126.
Re Platte County Independent Telephone Co., P. U. R. 1922D, 303.
Re Roanoke Water Works Co., P. U. R. 1920C, 745.
Re Georgia R. & Power Co., P. U. R. 1921A, 165.
Re So. California Telephone Co., P. U. R. 1922C, 97.
Re Exeter Water Works, P. U. R., 1923B, 339.
Re Cole, P. U. R. 1921C, 385.
Marinette v. City Water Co., 9 P. U. R. (N. S.) 308 (1934).
Milwaukee El. R. & Light Co. v. Milwaukee, P. U. R. 1918E, 1.
Grand Forks v. Red River Power Co., 8 P. U. R. (N. S.) 225.
Pacific T. & T. Co. v. Thomas, 13 P. U. R. (N. S.) 337.

A number of regulatory commissions have gone further than to condemn the use of reproduction cost as a basis for the valuation of public utilities. They have held that the prudent investment valuation of a utility is the factor that should control in the making of the rate. It must be noted that the commissions to a large extent have been forced to adopt a different theory because of the prevailing view as to the propriety of the use of reproduction cost. It seems highly probable that if reproduction cost were not forced upon the commissions by the courts, there would be wide agreement as to the merits of the prudent investment method. The following are some of the cases in which the

commissions have not only rejected reproduction cost as the basis, but have affirmatively adopted the prudent investment theory:

Public Service Commission v. Pacific Telephone & Telegraph Co., P. U. R. 1916D 947, 955.

Butler v. Lewiston A & W Street Ry. Co., P. U. R. 1916D, 25.

Public Service Commission of Washington v. Spokane Falls Gas Light Co., P. U. R. 1921C, 523.

Carlson v. Jamestown Telephone Co., P. U. R. 1920F, 645.

Poughkeepsie & W. Falls R. Co., 1st Ann. Rep., New York Public Service Commission, Vol. I, p. 255 (1921).

Cavanaugh v. Whitefish Municipal Water Utility, P. U. R. 1922E, 198.

Morris v. N. W. Bell Telephone Co., P. U. R. 1922D, 769.

Re So. Ill. Light & Power Co., P. U. R. 1919D, 489.

Re Pacific Gas & Electric Co., 1 P. U. R. (N. S.) 1.

Re Coast Valleys G. & E. Co., P. U. R. 1924C, 40.

Re San Joaquin Light & Power Corp., P. U. R. 1922D, 595.

Re Fresno Traction Co., P. U. R. 1925C, 566.

Department of Public Service v. Grays Harbor Railway & Light Co., 12 P. U. R., 178, 200.

Re Michigan Bell Telephone Co., 10 P. U. R. (N. S.) 149.

Re Sea Cliff & G. C. Gas Co., P. U. R. 1921A, 211.

Re Boise Artesian Water Co., 11 Ann. Rep. Idaho Public Utilities Commission 155 (1923).

Barth V. Hughes & D. Electric Co., P. U. R. 1922A, 740.
Re Midwest Power Co., P. U. R. 1922E, 22.

The general opinion of regulatory authorities who have passed upon the question of the proper valuation base is overwhelmingly in favor of the prudent investment as opposed to the reproduction cost method. Mr. Justice Brandeis in his concurrence in the Southwestern Bell Telephone Company case (262 U. S. 276), pointed out that the Public Utility Reports for the years 1920 to 1923 inclusive, contain 363 cases passing upon the method of determining rate base. In 63 of these cases, reproduction cost was severely criticized or expressly repudiated. In 5 cases, reproduction cost was applied. In almost the entire remainder, the reproduction cost was either ignored or given only slight weight.

The objection to reproduction cost has been expressed as follows by a commission:

> This method (reproduction at prices prevailing at time of valuation) of determining value * * * is based upon prophecy instead of realty, and depends so much upon half-truths that it bears only a remote resemblance to facts, and rises at best, only to the plane of a dignified guess. (*Danbury* v. *Danbury & Bethel Gas & Electric Light Co.* (Connecticut Public Utilities Commission) P. U. R. 1921D, 193, 206.)

This Court itself has found it an extremely difficult task to reconcile the reproduction cost method with the world of reality. Even as early as 1912, the Court expressed some doubt as to the exactness of this method. Speaking for the Court,

Mr. Justice Holmes said, "Every figure that we have set down with delusive exactness is 'speculative'." *City of Louisville* v. *Cumberland Telephone and Telegraph Co.*, 225 U. S. 430, 432 (1911).

Concurring in the *Southwestern Telephone Company* case (262 U. S. at 290), Mr. Justice Brandeis said:

> * * * The so-called rule of *Smyth* v. *Ames* is, in my opinion, legally and economically unsound. The thing devoted by the investor to the public use is not specific property, tangible and intangible, but capital embarked in the enterprise. Upon the capital so invested the federal Constitution guarantees to the utility the opportunity to earn a fair return. * * *

In his concurring opinion in *St. Joseph Stockyards Co.* v. *U. S.*, 298 U. S. 38, Mr. Justice Brandeis repeated this objection to the *Smyth* v. *Ames* doctrine. In a separate concurring opinion, Justices Stone and Cardozo said:

> We think the opinion by Mr. Justice Brandeis states the law as it ought to be, although we appreciate the weight of precedent that has now accumulated against it.

APPENDIX B

Relation between earnings and stock prices, 1924–1937 [1]

[Index numbers 1926=100]

	Composite	Industrials	Public utilities	Railroads
1924				
1st quarter	103.6	108.2	119.5	71.6
2nd quarter	84.5	88.6	108.3	65.4
3rd quarter	76.0	71.6	87.5	95.3
4th quarter	85.9	76.5	107.9	104.1
Average	86.9	85.9	105.4	84.9
1925				
1st quarter	82.4	82.9	106.9	66.0
2nd quarter	99.5	105.1	96.3	85.7
3rd quarter	101.8	98.3	81.3	128.8
4th quarter	89.6	82.8	99.0	102.5
Average	93.3	92.0	95.8	96.0
1926				
1st quarter	91.4	95.3	101.6	69.6
2nd quarter	107.0	112.5	99.9	94.3
3rd quarter	107.4	108.1	8.9	126.9
4th quarter	94.8	87.6	110.9	107.1
Average	100.0	100.0	100.0	100.0
1927				
1st quarter	84.9	85.2	109.1	66.2
2nd quarter	87.2	90.5	95.5	70.2
3rd quarter	79.6	75.2	81.9	94.0
4th quarter	65.5	55.5	97.4	79.3
Average	78.7	75.3	96.5	78.0
1928				
1st quarter	70.5	68.2	96.5	58.4
2nd quarter	75.0	76.4	79.1	67.8
3rd quarter	80.3	78.3	73.0	100.4
4th quarter	70.0	61.5	83.3	103.9
Average	73.9	70.7	82.5	82.9

[1] Sources of Indexes of Earnings and Stock Prices:

Earnings Indexes:

Standard Trade and Securities, Volume 3, Statistical Section, (Published by Standard Statistics Company):
Supplement of October 15, 1937, page 7.

Stock Prices Indexes:

Standard Trade and Securities, Volume 3, Statistical Section, (Published by Standard Statistics Company):
Supplement of May 29, 1936, page B–103.
Supplement of July 17, 1937, page B–160.
Supplement of October 15, 1937, pages 46, 47, and 48.

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Relation between earnings and stock prices, 1924–1937—Continued

[Index numbers 1926=100]

	Composite	Industrials	Public utilities	Railroads
1929				
1st quarter	62.6	61.5	72.8	61.3
2nd quarter	72.8	72.5	80.1	84.1
3rd quarter	63.4	65.2	41.2	97.6
4th quarter	65.3	59.0	70.6	93.8
Average	66.0	65.5	59.2	84.8
1930				
1st quarter	54.5	56.2	62.5	41.6
2d quarter	58.0	58.2	53.4	57.8
3d quarter	51.9	47.2	55.2	74.7
4th quarter	51.2	35.4	87.5	73.3
Average	53.4	50.4	63.0	60.7
1931				
1st quarter	40.5	33.0	53.7	16.5
2d quarter	53.3	48.3	53.5	36.3
3d quarter	43.1	35.3	71.1	46.7
4th quarter	30.8	3.7	114.1	24.3
Average	42.9	37.2	86.1	29.0
1932				
1st quarter	33.5	12.5	86.1	.....
2d quarter	25.6	14.0	152.7	.....
3d quarter	10.9	.....	103.0	.....
4th quarter	9.5	.....	107.5	5.1
Average	22.2	.....	120.0	.....
1933				
1st quarter	.....	.....	116.1	.....
2d quarter	47.5	40.1	107.9	4.6
3d quarter	51.0	50.5	97.1	49.0
4th quarter	41.9	28.5	149.1	4.9
Average	37.6	28.9	118.6	.....
1934				
1st quarter	44.0	36.3	132.7	.....
2d quarter	59.6	60.1	116.0	.....
3d quarter	41.0	40.9	111.6	.....
4th quarter	35.9	23.4	173.6	.....
Average	45.5	40.5	131.9	.....
1935				
1st quarter	59.0	55.1	209.2	.....
2d quarter	68.4	68.4	151.9	.....
3d quarter	52.9	52.2	112.8	.....
4th quarter	75.7	68.1	137.7	73.5
Average	65.5	61.3	147.9	.....

Relation between earnings and stock prices, 1924–1937—Continued

[Index numbers 1926=100]

	Composite	Industrials	Public utilities	Railroads
1936				
1st quarter	53.7	52.6	122.8	
2d quarter	76.8	78.6	121.6	18.8
3d quarter	63.6	60.5	105.5	32.2
4th quarter	80.5	70.6	158.8	36.8
Average	69.1	65.8	127.4	38.6
1937				
1st quarter	63.8	60.5	135.7	26.5
2d quarter	80.6	81.6	155.9	14.6

APPENDIX C

Summary of comparison of reproduction cost estimates in rate cases[1]

[Detail pages 131 to 138]

	No. of cases	Appraisal amounts			Excess of company appraisal
		Company	City or commission	Excess of company appraisal	
					Percent
Year 1928	25	867, 495, 001	351, 965, 943	515, 529, 068	29. 88
Year 1929	32	396, 393, 308	267, 409, 793	128, 973, 511	48. 23
Year 1930	18	185, 542, 529	138, 940, 783	46, 601, 746	33. 54
Year 1931	18	321, 357, 149	210, 981, 858	110, 325, 291	52. 30
Year 1932	10	152, 413, 117	74, 320, 022	78, 093, 095	105. 08
Year 1933	20	276, 949, 277	180, 569, 492	96, 379, 785	53. 38
Total	123	1, 400, 099, 376	924, 137, 898	475, 901, 486	51. 50

[1] The cases shown in this appendix are all the cases reported in Public Utility Reports for the years 1928 to 1933, inclusive, for which comparable information was given.

Reproduction cost estimates in rate cases—1928–1933

YEAR 1928

Name of case	Jurisdiction	P. U. R. reference	Appraisal amounts			Percent excess of company appraisal
			Company	City or commission	Excess of company appraisal	
1. Re Home Telephone Company	Indiana P. S. C.	1928 A 450	$1, 187, 746	$998, 681	$189, 065	18. 93
2. Re Georgia Power Company	Georgia P. S. C.	1928 A 534	23, 352, 860	19, 614, 216	3, 738, 644	19. 06
3. Knoxville *v.* South Pittsburg Water Co.	Pennsylvania P. S. C.	1928 B 211	9, 112, 933	8, 211, 343	901, 590	10. 98
4. Re Clarksburg Light & Heat Co.	West Virginia P. S. C.	1928 B 296	4, 482, 000	2, 004, 143	2, 477, 857	123. 64
5. Shamokin *v.* Roaring Creek Water Co.	Pennsylvania P. S. C.	1928 B 303	4, 000, 000	2, 000, 000	2, 000, 000	100. 00
6. City of Erie et al. *v.* Mutual Telephone Company	Pennsylvania P. S. C.	1928 B 537	5, 023, 494	421, 828	771, 666	18. 15
7. Clearfield *v.* Clearfield Water Company	Pennsylvania P. S. C.	1928 B 633	803, 379	413, 344	390, 035	94. 36
8. Re Pomona Valley Telephone and Telegraph Union.	California R. R. Com.	1928 B 707	729, 231	684, 350	44, 881	6. 56
9. Re Northwestern Indiana Telephone Co. et al.	Indiana P. S. C.	1928 B 729	545, 672	491, 179	54, 493	11. 09
10. Re Clinton County Telephone Co.	Missouri P. S. C.	1928 B 798	221, 017	200, 231	20, 786	10. 38
11. Re Pekin Water Works Co.	Illinois Commerce Com.	1928 C 269	639, 146	541, 370	97, 776	18. 06
12. Re Associated Telephone Co.	Indiana P. S. C.	1928 C 295	340, 332	273, 000	67, 332	24. 66
13. Borough of Keyport *v.* County Gas Company	New Jersey Board of Public Utility Comrs.	1928 C 327	1, 749, 481	1, 160, 444	589, 037	50. 76
14. Re Capital City Water Company	Missouri P. S. C.	1928 C 442	880, 779	677, 314	203, 465	30. 04
15. Re Guilford Chester Water Co.	Connecticut P. U. C.	1928 C 549	1, 548, 786	1, 168, 801	379, 985	32. 51
16. Re Madison Railways Co.	Wisconsin R. R. Com.	1928 C 844	1, 960, 216	1, 203, 000	757, 216	62. 94
17. University City *v.* West St. Louis Water & Light Co.	Missouri P. S. C.	1928 D 337	6, 281, 899	4, 480, 278	1, 801, 621	40. 28
18. Re Capital City Telephone Co.	Missouri P. S. C.	1928 D 766	291, 554	218, 395	73, 159	33. 50
19. Dept. of Public Works *v.* Morton Electric Co.	Washington Dept. Pub. Wks.	1928 D 813	34, 179	20, 064	14, 115	70. 35
20. Re Decatur County Independent Telephone Co.	Indiana P. S. C.	1928 E 5	360, 000	325, 000	35, 000	10. 77
21. Re Lexington Water Company	Missouri P. S. C.	1928 E 239	390, 117	275, 216	114, 901	41. 75

Reproduction cost estimates in rate cases—1928–1933—Continued

Name of case	Jurisdiction	P. U. R. reference	Appraisal amounts			Percent excess of company appraisal
			Company	City or commission	Excess of company appraisal	
22. Re Elwood Water Company	Indiana P. S. C.	1928 E 702	$650,000	$329,529	$320,471	97.25
23. Re Logansport Telephone Company	Indiana P. S. C.	1928 E 719	982,245	640,044	292,201	45.65
24. Santa Barbara *v.* Southern Counties Gas Company.	California R. R. Com.	1928 E 771	1,479,935	1,488,423	8,488	(0-57)
25. Electric Public Utility Company *v.* Public Service Commission.	Maryland Circuit Court	1928 E 856	518,000	315,750	202,250	64.05
Total for 1928			67,496,001	51,955,943	15,539,058	29.88
YEAR 1929						
1. Mayor of Hyattsville *v.* Washington Suburban Gas Co.	Maryland Public Service Commission.	1929 E 4, 6	$892,984	$685,140	$207,844	30.34
2. Re Public Service Electric and Gas Co.	New Jersey Board of Public Utilities Commissioners.	1929 E 17	197,673,670	114,408,002	83,265,668	72.78
3. Re Minier Mutual Telephone Company	Illinois Commerce Commission	1929 E 235	135,123	97,785	37,348	38.19
4. Public Utilities Commission *v.* Camden & Rockland Water Co.	Maine Public Utilities Commission.	1929 E 236, 250	1,311,667	1,157,924	153,743	13.28
5. Re City of Fresno	California Railroad Commission	1929 E 808, 807	3,030,784	1,662,601	1,368,183	82.29
6. Re Lincoln Telephone & Telegraph Company	Nebraska State Railway Commission.	1929 E 812	314,834	268,653	46,181	17.19
7. Re Southern California Telephone Company	California Railroad Commission	1929 E 610, 613	100,000,000	97,100,000	2,900,000	2.98
8. Re Southern Indiana Telephone Company	Indiana Public Service Commission.	1929 E 641, 645	64,029	58,573	5,456	9.19
9. R. Illinois Water Service Company	Illinois Commerce Commission	1929 E 659, 662	746,768	569,706	177,068	31.08

10. Plainfield-Union Water Co. *v.* Board of Public Util. Commissioners of N. J.	United States District Court, D. New Jersey.	1929 D 3, 13, 23	6,066,523	3,243,677	2,823,146	87.04
11. Re Oconto City Water Supply Company	Wisconsin Railroad Commission	1929 D 65	301,082	211,574	89,508	42.31
12. Re Lincoln Telephone & Telegraph Company	Nebraska State Railway Commission	1929 D 116, 119	53,817	40,194	13,623	33.89
13. Re Lambertville Water Co.	N. J. Board of Public Util. Commissioners.	1929 D 138	203,984	114,772	89,212	77.73
14. Franks *v.* Johnstown Tel. Co.	Pa. Public Service Comm	1929 D 161	2,408,115	1,719,807	663,608	30.76
15. Columbia *v.* Columbia Water Co.	Pa. Public Service Comm	1929 D 269	498,431	372,481	125,950	33.81
16. Greencastle Water Works Co. *v.* P. S. Comm. of Indiana et al.	U. S. Dist. Ct. S. D. Indiana, Indianapolis Division.	1929 D. 287, 293, 294, 295.	523,500	334,164	189,336	56.66
17. James W. Sharp et al. *v.* Newville Water Co.	Pa. Public Service Comm	1929 618:	67,474	40,238	27,236	67.69
18. Re City of Los Angeles et al.	Cal. R. R. Comm	1929 C 289, 306	827,818	668,330	159,488	23.86
19. City of Erie *v.* Pa. P. S. Comm	Pa. Superior Court	1929 C 566	5,025,494	4,251,228	771,066	18.15
20. Worcester Electric Lt. Co. *v.* Henry C. Atwill et al.	U. S. District Court, Massachusetts.	1929 B 1, 34	16,242,027	9,898,805	6,343,222	64.08
21. P. S. Comm. *v.* Great Northern Utilities Co.	Montana P. S. Comm	1929 B 177	199,709	36,267	163,442	450.66
22. James W. Sharp et al. and Borough of Newville *v.* Newville Water Co.	Penn. P. S. Comm	1929 B 330	67,474	40,238	27,236	67.69
23. Re Madison Telephone Co.	Nebr. State Railway Comm	1929 B 385	103,379	91,825	11,554	12.58
24. Re Middle States Telephone Co.	Ill. Comm. Comm	1929 B 390, 393	582,196	567,042	15,154	2.67
25. Re Dixon Water Co.	Ill. Comm. Comm	1929 B 403	491,885	434,027	57,858	13.33
26. Re Vermont Teleph. & Exch. Co.	Ill. Comm. Comm	1929 B 411	17,923	14,611	3,312	22.67
27. Pittsburgh *v.* Peoples Natural Gas Co.	Penn. P. S. Comm	1929 B 536, 539	53,426,392	24,374,307	29,052,085	119.19
28. Re Middle States Utilities Co.	Mo. P. S. Comm	1929 B 554, 556	72,011	56,251	15,760	27.79
29. Jones *v.* Wabash Valley Elec. Co.	Indiana P. S. Comm	1929 B 562	88,721	72,157	16,564	22.96
30. University City *v.* West St. Louis Water & Light Co.	Mo. P. S. Comm	1929 612	4,331,634	4,278,427	53,207	1.24
31. Re Northern Indiana Tel. Co.	Ind. P. S. Comm	1929 A 74	564,340	506,597	57,743	11.40
32. Long *v.* Snow Shoe Water Co.	Penn. P. S. Comm	1929 A 655	55,240	[1]33,000	21,250	62.52
Total for year 1929			306,382,308	267,409,792	128,972,511	48.23

[1] Decrease.

Reproduction cost estimates in rate cases—1928–1933—Continued

YEAR 1930

Name of case	Jurisdiction	P. U. R. reference	Appraisal amounts			Percent excess of company appraisal
			Company	City or commission	Excess of company appraisal	
1. Re Salamonia Tel. Co.	Ind. P. S. Comm.	1930 E 39, 40	$30,332	$17,899	$11,453	63.99
2. Re Cambridge Home Tel. Co.	Ohio P. U. Comm.	1930 E 65, 73	630,396	395,576	234,820	59.36
3. Re Ind. Service Corp.	Ind. P. S. Comm.	1930 E 276, 278	6,106,011	5,664,009	442,002	7.80
4. Re Kansas City Public Service Co.	Mo. P. S. Comm.	1930 E 384, 395	40,615,610	33,826,216	6,789,394	20.07
5. Re Iroquois Gas Corp.	N. Y. Dept. of Public Service, State Div., P. S. Comm.	1930 D 31, 32	53,430,014	27,137,668	26,292,346	96.89
6. Me. P. U. Comm. v. Gould Elec. Co.	Me. P. U. Comm.	1930 D 289, 294	546,495	375,630	170,865	45.49
7. Re Home Telephone Co.	Ind. P. S. Comm.	1930 D 481	243,647	157,738	85,909	54.46
8. Re Mich. Federated Utilities, Mt. Clemens Division.	Mich. P. U. Comm.	1930 D 506	1,453,088	1,413,733	39,355	2.78
9. Fort Worth Gas Co. v. City of Fort Worth et al.	U. S. Dist. Ct. N. D., Texas, Fort Worth Division.	1930 C 203, 205, 210	5,297,976	3,426,570	2,871,406	83.80
10. Re Pacific Telephone & Telegraph Co.	Cal. R. R. Comm.	1930 C 481, 498	63,086,600	56,863,987	6,222,613	10.94
11. Vincennes Water Supply Co. v. P. S. Comm. of Ind.	U. S. Circuit Court of Appeals Seventh Circuit.	1930 B 216, 220, 221	1,163,719	778,769	384,950	49.43
12. Re Starke County Tel. Co.	Ind. P. S. Comm.	1930 B 336	58,544	49,351	9,193	18.63
13. Re Northwestern Ind. Tel. Co.	Ind. P. S. Comm.	1930 B 431, 434	199,350	181,477	17,873	9.85
14. Re Ill. Bell Tel. Co., Decatur Exchange	Ill. Comm. Comm.	1930 B 455, 456	2,076,886	1,865,078	211,308	11.33
15. Re Wisconsin Public Util. Co.	Wis. R. R. Comm.	1930 A 119	864,884	800,526	64,058	12.80
16. Re Ill. Bell Tel. Co., Edwardsville Exchange	Ill. Comm. Comm.	1930 A 143, 145	269,492	220,283	49,209	22.34

17. West Palm Beach Water Co. v. City of West Palm Beach.	U. S. Dist. Ct. Sou. Dist. of Florida.	1930 A 177, 187	5,989,186	3,544,935	2,424,251	69.39
18. Re Citizens Independent Tel. Co.	Ind. P. S. Comm.	1930 A 431	2,802,079	2,521,435	280,641	11.13
Total for year 1930			185,542,539	126,960,793	46,601,746	33.54

YEAR 1931

1. Village of Blair v. Northern States Power Company.	Wisconsin R. R. Commission	1931 A 91	822,357	818,483	86,875	44.41
2. Re Los Angeles Gas & Electric Corp.	California R. R. Commission	1931 A 147, A 166	95,767,351	65,500,000	30,267,351	46.21
3. Re Southern Indiana Gas & Elec. Co.	Indiana P. S. C.	1931 A 404	699,455	508,275	91,180	15.24
4. Re Johnson County Telephone Co.	Indiana P. S. C.	1931 A 451	401,443	303,881	97,562	22.11
5. Re Bowdoin Utilities Company	Montana P. S. C.	1931 B 25, B 43	750,364	622,636	127,968	20.55
6. Re Ohio Bell Telephone Company	Ohio P. U. C.	1931 B 51	144,995,146	91,061,900	53,933,246	59.23
7. Re Springfield City Water Company	Missouri P. S. C.	1931 B 82	4,096,500	3,203,566	892,934	28.94
8. Re Beckley Water Company	West Virginia P. S. C.	1931 B 279	532,404	326,495	205,909	63.07
9. Re United Corporation	Indiana P. S. C.	1931 B 501	102,409	74,039	28,250	38.28
10. City of Elko v. Elko Lamoille Power Company.	Nevada P. S. C.	1931 C 20	428,789	319,909	108,880	34.06
11. Re Mondovi Telephone Company	Wisconsin R. R. Commission	1931 C 442	61,412	56,252	5,160	9.17
12. Re Escanaba Power & Traction Co.	Michigan P. U. C.	1931 D 154	2,162,364	1,428,223	734,141	51.40
13. Re Utica Gas & Electric Company	New York Dept. of P. S. State Div. Public Service Commission.	1931 D 239	20,285,500	9,246,468	11,039,032	119.39
14. Re City of Spooner	Wisconsin R. R. Com.	1931 E 43	99,657	54,805	44,852	81.84

Reproduction cost estimates in rate cases—1928–1933—Continued

YEAR 1931—Continued

Name of case	Jurisdiction	P. U. R. reference	Appraisal amounts			Percent excess of company appraisal
			Company	City or commission	Excess of company appraisal	
15. Re Community Telephone Co	Wisconsin P. S. C	1931 E 63	$64,362	$56,998	$7,364	12.92
16. City of Charleston et al. v. Public Service Commission.	W. Va. Supreme Court of Appeals	1931 E 76	38,243,345	26,569,430	11,673,915	43.94
17. Re Michigan Home Telephone Co	Michigan P. U. C	1931 E 440	1,646,302	1,478,384	167,918	11.38
18. Re Atlanta Gas Company	Georgia P. S. C	1931 E 464, E 466	10,940,619	10,018,125	922,494	9.21
Total for 1931			321,257,149	210,931,858	110,325,291	52.30

YEAR 1932

1. City of Vincennes v. Vincennes Water Supply Co.	Indiana P. S. C	1932 A 21	$1,517,810	$611,588	$906,222	148.16
2. International Railway Co. v. William A. Prendergast, et al.	U. S. District Court, Western District of N. Y.	1932 A 167	55,000,000	18,788,884	36,211,116	192.73
3. Re United Fuel Gas Co	W. Virginia P. S. C	1932 B 66	47,186,190	30,659,150	17,527,040	59.09
4. City of Moncton v. Moncton Tramways, Electricity & Gas Company, Ltd.	New Brunswick Board of Comrs. of P. U.	1932 B 374	355,214	336,020	49,194	14.64
5. Re Alexandria Water Co	Virginia State Corp. Com	1932 C 350	2,026,895	1,145,000	881,895	77.02
6. Scranton-Spring Brook Water Service Company et al. v. Public Service Commission of Pennsylvania.	Pennsylvania Superior Court	1932 C 477	39,976,705	19,986,596	20,390,109	104.10
7. Re City of Visalia	California R. R. Commission	1932 C 520	248,408	89,329	159,079	178.08
8. Re Ohio Central Telephone Corp	Ohio P. U. C	1932 D 441	1,594,203	953,511	640,692	67.19

9. Central Kentucky Gas Co. v. Railroad Commission of Kentucky et al.	U. S. District Court, Eastern Dist. of Ky.	1932 E 71	2,026,069	1,189,489	836,580	70.50
10. Re Missouri Utilities Company et al.	Missouri P. S. C.	1932 E 462	2,449,623	1,960,455	489,168	24.95
Total for 1932			152,413,117	74,320,022	78,093,095	105.08

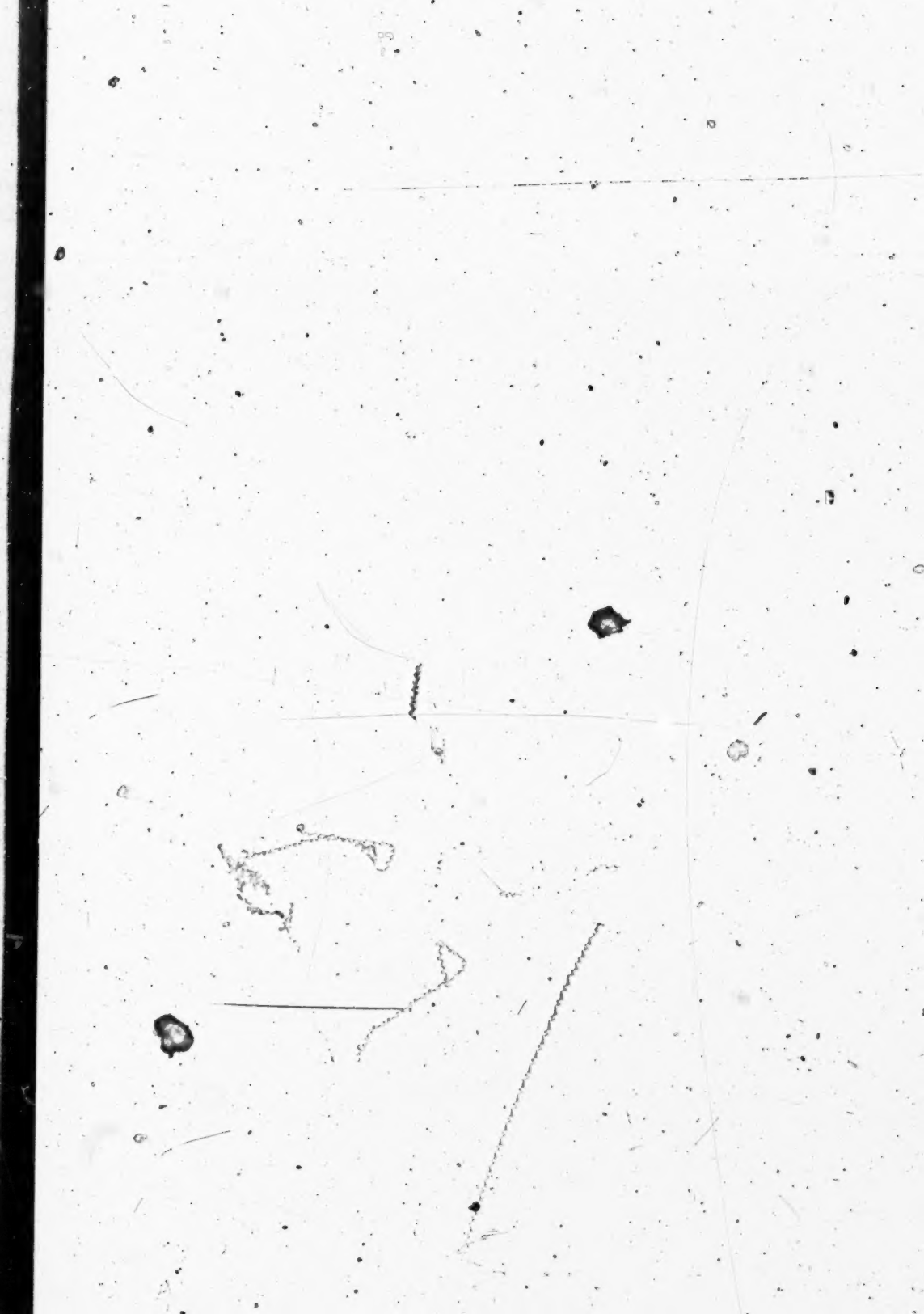
YEAR 1933

1. Public Util. Comm. et al. v. Newport Water Corp.	R. I. Public Util. Comm.	1933 E 1	85,533,087	82,341,720	81,201,367	57.61
2. Borough of Grove City v. Union Heat & Light Co.	Penn. P. S. Comm.	1933 E 90	823,344	430,477	392,867	91.26
3. City of Manston v. Manston Tel. Co.	Wis. P. S. Comm.	1933 E 161	55,903	48,842	7,061	14.46
4. City of Seattle v. Seattle Gas Co.	Wash. Dept. of Public Works	1933 E 253	15,227,289	11,761,320	3,565,969	30.32
5. City of Trenton v. Mo. Public Service Company.	Mo. P. S. Comm.	1933 E 270	288,890	231,972	56,918	24.54
6. P. S. Comm. of Mo. v. East Mo. Power Co.	Mo. P. S. Comm.	1933 E 369	707,566	548,276	159,290	29.05
7. City of Wheeling v. Natural Gas Co. of W. Va.	W. Va. P. S. Comm.	1933 D 1, 21	10,661,736	6,695,387	3,966,349	59.25
8. Clark's Ferry Bridge Co. v. P. S. Comm. of Pa.	Pa. Superior Court	1933 D 173, 178	1,029,297	741,871	287,426	38.74
9. Mont. P. S. Comm. v. Billings Gas Co. (and Gallatin Natural Gas Co.).	Mont. P. S. Comm.	1933 D 341	1,165,796	719,331	446,467	62.07
10. Okla. Corp. Comm. Re. Lone Star Gas Co. et al.	Okla. Corp. Comm.		1,678,836	949,728	729,108	76.77
11. Re Indiana (Interstate) Public Service Company.	Ind. Public Service Comm.	1933 C 1, 17, 22	70,895,243	41,291,566	29,203,677	70.55
12. Re Broad River Power Co.	S. C. R. R. Comm.	1933 C 274	292,681	155,090	54,681	35.28
13. Re Potomac Edison Co.	Maryland P. S. Comm.	1933 C 351, 359	26,319,132	12,847,671	13,471,461	104.86
14. Re Yonkers Railroad Co.	N. Y. Dept. of P. S., State Division.	1933 B 6, 41	14,991,560	10,121,370	4,870,190	46.10
15. Elko-Lamoille Power Co. v. P. S. Comm. of Nevada et al.	U. S. Dist. Ct. D. Nevada	1933 B 191, 192	518,138	372,884	145,254	38.95
16. Wichita Gas Co. v. P. S. Comm. of Kans.	U. S. Dist. Ct. D. Kansas, First Division.	1933 B 225, 242, 243	105,000,000	73,000,000	32,000,000	43.84
17. Re Augusta Lt. & Tel. Co.	Wis. P. S. Comm.	1933 B 478, 481	38,512	24,477	14,035	57.34
18. Fort Fairfield Lt. & Pr. Co. et al. v. Me. Public Service Co.	Me. P. S. Comm.	1933 B 493	1,882,508	1,504,864	377,644	25.09
19. Re Patrons of Clinton Electric Lt. & Pr. Co.	Conn. P. U. Comm.	1933 A 467, 472	355,450	254,107	101,343	39.88

Reproduction cost estimates in rate cases—1928–1933—Continued

YEAR 1933—Continued

Name of case	Jurisdiction	P. U. R. reference	Appraisal amounts			Percent excess of company appraisal
			Company	City or commission	Excess of company appraisal	
20. Re Northwestern Elec. Co.	Ore. P. U. Comm.	1933 A 493, 499	$17,482,569	$12,686,669	$4,795,900	37.78
Total for year 1933			276,949,277	180,569,492	96,379,785	53.36
Total, years 1928 to 1933, inclusive (123 cases)			1,400,698,376	924,197,880	475,901,496	51.50



APPENDIX D

Tabulation of States having statutes authorizing public service commissions to regulate the issuance of securities of electric or gas utilities and statutes authorizing commissions to prescribe a uniform system of accounts for such utilities

Authority to regulate issuance of securities			Authority to prescribe uniform system of accounts			
States having authority	Statutory reference	States having no authority	States having authority	Statutory reference	Date of first order adopting uniform system of accounts	States having no authority
Alabama	Secs. 9744-9753, Code of Ala., 1923.	Colorado.	Alabama	Secs. 9736-9738, Code of Ala., 1923	February 6, 1924	Delaware.[1]
Arizona	Sec. 708, Rev. Code of Ariz., 1928.	Delaware.[1]	Arizona	Sec. 3, Const. Art. XV	1928.	Florida.[1]
Arkansas	Act 324, Acts of Gen. Assembly of Ark., for 1935, Secs. 58 & 59.	Florida.[1]	Arkansas	Act 324, Acts of Gen. Assembly of Ark., 1935, Secs. 22 (a) & 8 (c).	None adopted.	Iowa.[1]
California	L. 1915, Ch. 91, Sec. 52 (a).	Idaho.	California	Sec. 48, Act 6386, G. L.	October 28, 1913	Louisiana.
Connecticut	Ch. 191, Public Acts of 1935.	Iowa.[2]	Colorado	Sec. 33, p. 480, L. 1913	January 10, 1916	Minnesota.[2]
District of Columbia	D. C. Code, T. 26, Sec. 90.	Louisiana.	Connecticut	Sec. 3602, Gen. Sts. Rev. 1930	November 1, 1923	Mississippi.
Georgia	Sec. 2665, 1926 Code.	Minnesota.[2]	District of Columbia	Sec. 33-37, T. 26, D. C. Code	1930	New Mexico.
Illinois	R. S. 1933, Ch. 111a, Sec. 35.	Mississippi.[1]	Georgia	Sec. 2663, Code 1926	October 24, 1923	South Dakota.[1]
Indiana	Ch. 5, Pub. Serv. Acts, Secs. 54-503, 54-504.	Montana.	Idaho	Sec. 59-524, —525, Id. Code Ann.	October 27, 1913	Texas.[1]
Kansas	Sec. 66-126, Gen. Sts. of Kans., 1935.	Nevada.	Illinois	Secs. 11-15, Ch. 111 2/3, R. S. 1933	1919	
Kentucky	Sec. 3959-24, Ky. Stats.	Oklahoma.	Indiana	Sec. 54-209, P. S. C. Acts	May 1, 1918	
Maine	Sec. 41, Ch. 62, Rev. Stats.	South Dakota.[1]	Kansas	Secs. 66-122, 123, R. S.	October 27, 1923	
Maryland	Sec. 392, Art. 23, Ann. Code of P. G. L. of Md.	Texas.[1]	Kentucky	Sec. 4 (l), p. 580, L. 1934	1926	
Massachusetts	Ch. 222, Mass. Acts of 1935.	Utah.	Maine	Secs. 17-21, Ch. 62, R. S.	July 1, 1915	
Michigan	Sec. 11077, Compiled Laws of 1929.	West Virginia.	Maryland	Sec. 388, Art. 23, Ann. Code, P. G. L. of Md.	June 12, 1911	
Missouri	Secs. 5196-5196, Rev. St., 1929.	Wyoming.	Massachusetts	Ch. 382, Mass. Acts of 1887	1887	
Nebraska	Secs. 75-1201, C. S., 1929.		Michigan	Sec. 11086, Ch. 209, C. L.	December 18, 1914	
New Hampshire	Ch. 24, Sec. 1, P. L. of N. H.		Missouri	Sec. 5190, Mo. Stats. Ann.	January 1, 1915	
New Jersey	Sec. 167-24 (e) & (f), Supp.		Montana	Sec. 3285, Code of 1921	1913	
New Mexico	Secs. 32-706, 32-706, 1929 C. L.		Nebraska	Sec. 1, Const. Art. X	None adopted.	
New York	Sec. 69, Public Service Law.		Nevada	Sec. 6109, C. L.	None adopted.	
North Carolina	C. S. 1112 (18); Sec. 18, Ch. 307 P. L. 1933.		New Hampshire	Sec. 7, Ch. 240, Public Laws	1914	
North Dakota	Sec. 4606c 20; Supp. C. L. of N. D.		New Jersey	Sec. 167-17 (d), Supp.	December 3, 1913	
Ohio	Secs. 614-53-54-55, Gen. Code of Ohio.		New York	Sec. 66, subd. 4, P. S. L.	October 21, 1908	
Oregon	Ch. 441, Ore. L. 1933.		North Carolina	C. S. 1112 (13); Sec. 13, Ch. 307, P. L. 1933	November 18, 1931	
Pennsylvania	Art. VI, Secs. 601-604, L. 1937.		North Dakota	Ch. 192, L. 1919	July 28, 1921	
Rhode Island	Ch. 2345, P. L. of 1926.		Ohio	Sec. 614-10, Gen. Code	January 1, 1915	
South Carolina	1932 Reg. Act, Sec. 1 (l), Sec. 2 (m) & (n).		Oklahoma	Okla. Stats. 3620	July 1, 1914	
Tennessee	Sec. 5452 (d), Code of Tenn.		Oregon	Or. C., Sec. 61-211-212	June 16, 1913	
Vermont	Sec. 5953, P. L. Vt. Also Secs. 5991 & 6108.		Pennsylvania	Sec. 1404, Art. V, P. U. Law	November 19, 1918	
Virginia	Ch. 160A, Secs. 4073(1)-4073(16).		Rhode Island	Sec. 58, Ch. 353, G. L. 1923	None adopted.	
Washington	Sec. 2, Ch. 540, L. 1933.		South Carolina	Sec. 2 (o), 1932 Reg. Act	January 1, 1931	
Wisconsin	Ch. 184, Wisc. Stats.		Tennessee	Sec. 5451, Tenn. Code	December 28, 1932	
			Utah	Sec. 76-4-22, R. S.	December 28, 1923	
			Vermont	Sec. 6096, P. L. of Vt.	May 27, 1930	
			Virginia	Sec. 4070, Va. Code	December 11, 1930	
			Washington	Sec. 2, Ch. 151, L. 1933	January 28, 1913	
			West Virginia	Sec. 8, Art. 2, Ch. 24, Code of W. Va.	March 6, 1923	
			Wisconsin	Sec. 196.06 Wisc. Stats.	December 15, 1908	
			Wyoming	Sec. 94-144, R. S. 1931	March 13, 1923	

[1] Delaware has no regulatory commission.
[2] Regulatory Commission of this State has no jurisdiction over electric or gas utilities.
[3] Regulatory Commission of this State has no jurisdiction over valuation or rates of electric utilities.

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